

**Current and potential production of different NTFP and Medicinal and Aromatic Plants and threats in conservation and sustainable management of different NTFPs and MAP in 20VFDs of Kullu & Lahaul Spiti Districts**



**Final Report  
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## 1.0 Background

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Globally, Medicinal plants have been used in various systems of medicine for curing range of diseases and ailments since time immemorial. World Health Organization (WHO) has estimated that approximately 80% of the world population still depend on herbal medicine for their primary health care needs. WHO assessed that around 21,000 plants having the medicinal potential around the world. As per National Medicinal Plant Board (NMPB) assessment more than 7000 species are estimated to have medicinal usage in folk and traditional medicine health care in the country. Whereas, about 2,700 plants species are reported to be used in the codified Indian Systems of Medicine viz. Ayurveda (1800 species), Siddha (500 species), Unani (400 species) and Amchi (300 species). Medicinal plants are not only provide the primary healthcare needs of thousands of dependant populace but also support the livelihood of many indigenous communities. In India, about 1178 species of medicinal plants are estimated to be in trade of which 242 species have annual consumption levels in excess of 100 metric tons/year. The domestic demand of medicinal plants has been estimated 1.95 lakh MT for the year of 2014-2015 and export demand of medicinal plants has been estimated 1.34 lakh MT during 2014-2015. However, more than 90% of the species used in trade continue to be collected from the wild, and nearly 66% are being gathered through destructive and un-sustainable way to full fill the demand of the herbal industries. This has brought several plants at the verge of extinction.

Himachal Pradesh is biodiversity rich Himalayan state of the country. The landscape of state is characterized by snow - capped mountain, lush green forest, rich biological resource, diverse agro climatic zones, mesmerising horticulture orchards and culturally diverse populace. The state is a rich repository of medicinal and aromatic plants (MAP) wealth. MAP sector has the huge potential for improving the health and livelihood security of the people of the State. Growing demand of himalayn medicinal plants in different indian system of medicine have incresed pressure on the wild populations of medicinal plant species. Excessove extrcation of high value medicinal plants from wild has depeleted the wild stock of such species. Therefore, cultivation is the only vibale solution for the conservation of species and providing livelihood option to the forest dependent communities of the state. Govt. of Himachla Pradesh has identified the MAP sector as a potentail vehicle for the economic growth of the state.

Himachal Pradesh is treasure house of various valuable medicinal plants. Since ancient time, communities are using various plant species for curing their ailments and diseases. Around 800 species are estimated to be used for some or the other medicinal purposes within andoutside the State (HP medicinal plant sector policy 2006; Dutt et al. 2017).An analysis of the habits of the documented medicinal plants of the state shows that an overwhelming majority of these are herbs (70%), followed by shrubs (15%), trees (10%) and climbers (5%).However, as per Chauhan 1999 assessment, if the plants used in household remedies (ethnomedico-botanical importance) are taken in to the account, the number of useful medicinal and aromatic plants may easily number around 1500 species. Comprehensive

documentation of MAP diversity and ethnomedicinal practice is likely to increase to increase the number of medicinal and aromatic plants in the state.

HP Forest Ecosystem Management and Livelihood Improvement Project (PIHPFEM&L) has set up a State level Him Jadi-Buti Cell in PMU to coordinate all activities relating to conservation, promotion, sustainable management of NTFPs including Medicinal Plants. 11 nos. of Cluster level Him Jadi-Buti Societies/ Producer Groups have been set up to help right holders and growers of NTFPs and medicinal plants in sustainable management of NTFP and market access. The Project interventions on NTFP improvement include plantation in forest areas, plantation and cultivation in non-forest areas, conservation and sustainable harvesting of NTFPs, research & development, enterprise development and market access. The Project will undertake assessment of availability of different NTFPs and Medicinal Plants in 11 clusters with the help of external resource institutions, universities etc.

Keeping in view of the above, Jadi-Buti Cell of JICA project organized a consultation meeting to discuss scientific approach to livelihood generation through Non-timber forest products (NTFPs) including medicinal and aromatic plants for identification of species and cluster areas on August 07, 2020. Role of individual Institutions/ Universities for the assessment of the MAP species and potential areas / clusters for collection, cultivation (*in situ and ex situ*) of medicinal and aromatic plants etc. were discussed during the said meeting. Afterwards, the G.B. Pant National Institute of Himalayan Environment (NIHE) signed an agreement with Himachal Pradesh Forest Department (HPFD) through Society for Improvement of Forest Ecosystems Management and Livelihoods in H.P. for the assessment of potential of NTFP and Medicinal and Aromatic Plants (MAPs) in 20 VFDs located in Lahaul-Spiti and Kullu districts of Himachal Pradesh.

The present report provides the detail information about MAP of 20 VFDs of Kullu and Lahaul & Spiti districts.

## **2.0 Objectives**

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The basic objectives of this assessment are to;

- Identify the potential areas within the cluster for production of NTFPs, (MAP)
- Estimate the current level of production of different NTFPs,
- Assess the status regeneration of different NTFPs,
- Identify the issues in conservation, regeneration, harvesting and management of NTFPs in the cluster, and
- Prepare a plan for conservation, resource development and sustainable management of NTFPs in the cluster.

## **3.0 Approach and Methodology**

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The following approach and methodology has been adopted for the proposed assignment:

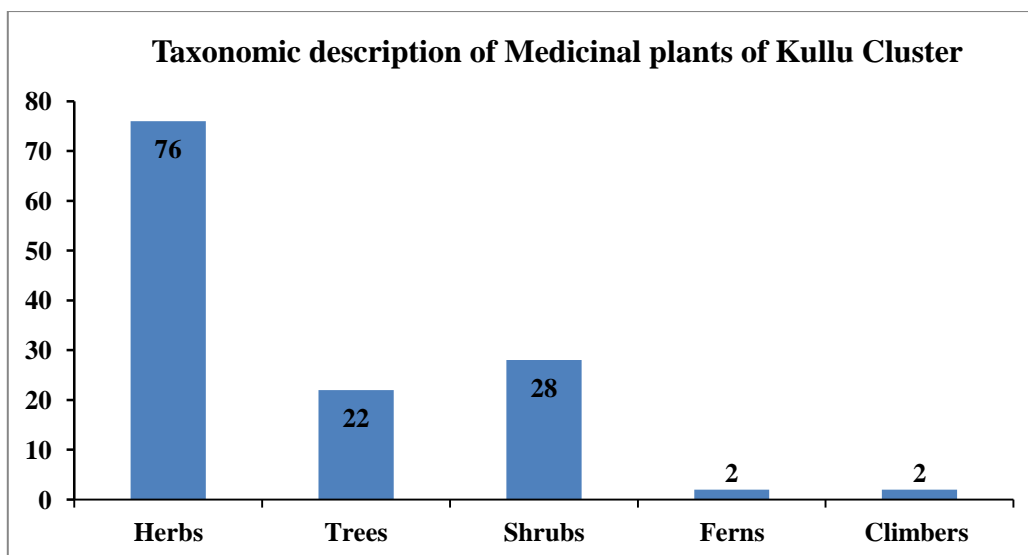
Review of secondary information related with medicinal plants of Himachal Pradesh particularly Kullu and Lahaul Spiti districts were carried out (Chauhan 1989, 1990, 1999; Aswal and Mehrotra 1994; Sharma and Singh 1996; Dhaliwal and Sharma 1997, 1999; Sharma and Dhaliwal 1997a, 1997b; Singh and Rawat 2000; Kaur and Sharma 2004; Chauhan 1988, 1989, 1990, 1996, 1999; Jain 1991; Samant *et al.* 1998, 2001, 2007, Badola 2001; Sood *et al.* 2001; Badola and Pal 2003, Bhattacharya and Uniyal 1982; Gammie 1898; Kapahi 1990; Rau 1960; Samant and Pant 2006; Kala 2006a,b; Dutt *et al.* 2018). Baseline data collection from diverse range of stakeholders through semi-structured questionnaire survey (Kala *et al.*, 2004; Samant *et al.*, 2007). Multi-stakeholders consultation workshop were organized at VFDS and Cluster level for identification of potential species and sites for medicinal plant cultivation. Field survey were also carried out for identification of potential *in-situ* and *ex-situ* cultivation sites and high value MAPs of project area. Assessment of production and trade of prioritized medicinal plant species of the study sites was also conducted through consultation with forest department and MAP trades of study area (Badola & Pal, 2002). Cluster conservation and management action plan was prepared through wider consultation and field study for cultivation, conservation and sustainable utilization of MAPs.

#### **4.0 Outcome of the work**

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##### **4.1 Assessment of Potentiality and Production of Medicinal & Aromatic Plants of Kullu Cluster, Kullu District**

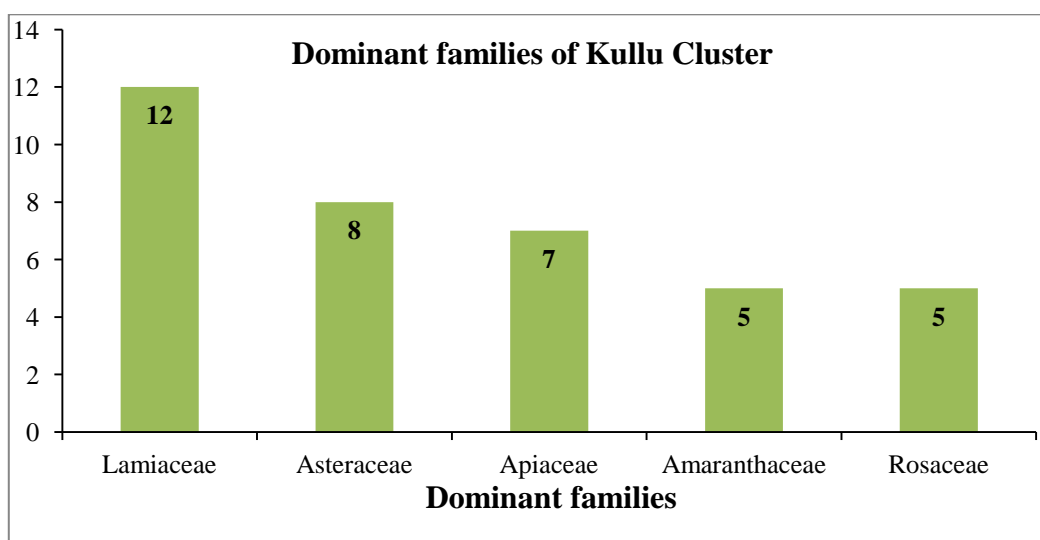
Kullu cluster comprises 5 ranges viz. Manali, Naggar, Patlikulh, Bhutti, and Kullu ranges. MAP assessment was carried out in the nine VFDs/Panchayats viz. Balh, Brahman, Hallan II, Jana, Pichhalihar, Nasogi, Sari, Palchan and Majhat of Kullu Cluster. A total 148 respondents were surveyed for status and potential of medicinal plants in the cluster. A total of 130 medicinal and aromatic plants belonging to 56 families were recorded during the survey. Out of these, 22 species were trees, 76 herbs, 28 shrubs, 2 ferns and 2 climbers (Fig 1). Among the families, Lamiaceae (12 spp.), Asteraceae (8 spp.), Apiaceae (7 spp.), Amaranthaceae (5 spp.), and Rosaceae (5 spp.) are dominant (Fig. 2).



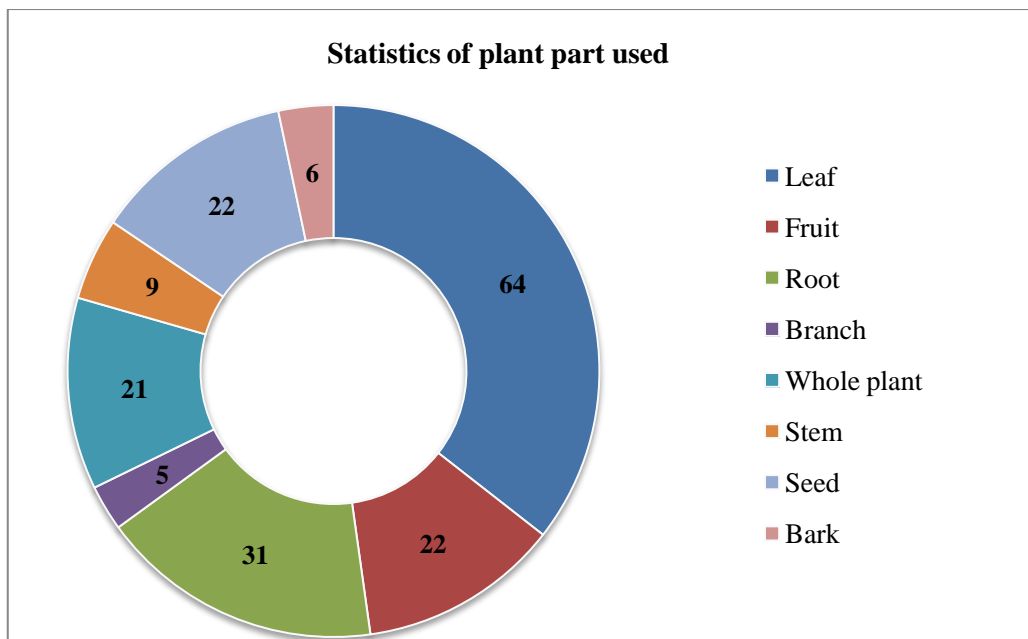
**Fig. 1: Taxonomic description of Medicinal plants of Kullu Cluster**

Different parts of the plants were utilized, of which the leaf was used in the majority cases (64), followed by fruit (22 spp.), whole plant (21 spp.), root (31 spp.), seed (22 spp.) branch (5 spp.), bark (6 spp.) and stem (9 spp.) (Fig. 3).

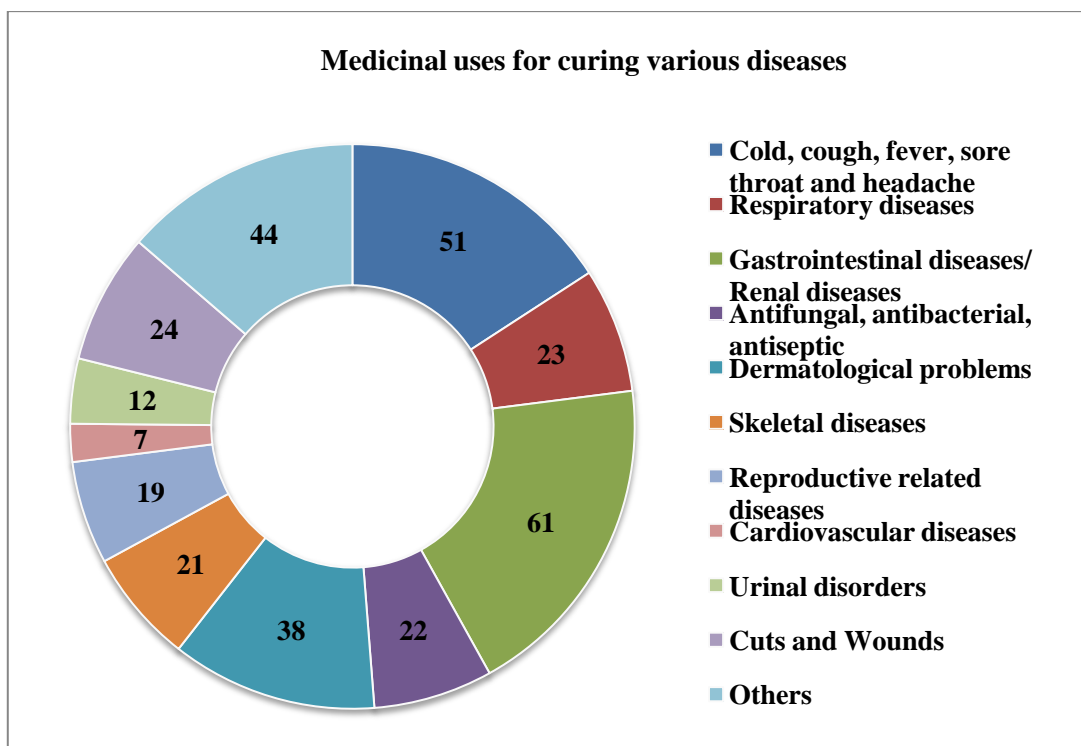
These 130 MAPs were used by local inhabitants for curing various diseases / ailments, and categorized into 10 broad categories *i.e.*, Gastrointestinal diseases/ Renal diseases (19%), Cold, cough, fever, sore throat and headache (16%), Dermatological problems (12%), Respiratory diseases(7%) , Antifungal, antibacterial, anti septic (7%), Cuts and wounds (7%), Skeletal diseases (6%), Urinal disorders (4%), Reproductive related diseases (6%), and Cardiovascular diseases (2%) (Fig. 4).



**Fig. 2: Dominant families of medicinal plants of Kullu valley**



**Fig. 3: Statistics of plant part used**



**Fig. 4: Medicinal uses for curing various diseases of MAPs**

Currently, the villagers of Kullu Cluster are not cultivating medicinal plant species in their agricultural/farm land. They mostly collect medicinal plants from wild, majorly for their own medicinal uses. Only a few species such as *Morchela esculanta*, *Picrorhiza kurroa*, *Bergenia ligulata*, *Aconitum heterophyllum*, *Trillium govanianum*, etc. are being traded by the community in a very small scale.



Among the 130 MAPs, the following high value medicinal plant species are identified from study area *Picrorhiza kurroa*, *Morchela esculanta*, *Hedychium spicatum*, *Trillidium govanianum*, *Zanthoxylum armatum*, *Aconitum heterophyllum*, *Podophyllum hexandrum*, *Polygonatum verticillatum*, *Polygonatum multiflorum*, *Paris polyphylla*, *Asparagus racemosus*, *Heracleum candicans*, *Allium humile*, *Acorus calamus*, *Viola pilosa*, *Taxus contorta*, *Dioscorea deltoidea*, *Bergenia ligulata*, *Origanum vulgare*,. Price details of high value medicinal plants of Himalayn region in different markets of Country have also been recorded for identification of potential MAP species of the Project area (table 1)

**Table 1: Price details of high value medicinal plants in different markets of Country**

<b>Botanical Name-Part used</b>	<b>Trade Name (Part)</b>	<b>Berham pur</b>	<b>Dhamt ari</b>	<b>Kolk ata</b>	<b>Neem uch</b>	<b>Shivp uri</b>	<b>Sillig uri</b>
<i>Aconitum heterophyllum</i> -Root	Atis (Kadg)-Root	***	***	7700	***	***	***
<i>Acorus calamus</i> -Root	Bach-Root	200	115	180	85	120	120
<i>Asparagus racemosus</i> (Nepali)-Root	Satawari (Nepali)-Root	270	***	300	190	200	***
<i>Bacopa monnieri</i> -Whole Plant	Brahmi-Whole Plant	300	***	380	45	42	***
<i>Berberis aristata</i> -Wood	Daruhaldi-Wood	110	***	120	***	36	80
<i>Bergenia ciliata</i> -Root	Pakhanved-Root	***	***	110	***	60	160
<i>Cedrus deodara</i> -Wood	Devdaru-Wood	110	***	50	***	***	80
<i>Cinnamomum tamala</i> -Leaf	Tejpatta-Leaf	75	***	48	***	***	70
<i>Juniperus communis</i> -Fruit	Hauber-Fruit	***	***	160	***	***	170
<i>Ocimum sanctum</i> -Whole Plant	Tulsi Panchang-Whole Plant	240	***	130	180	***	170
<i>Paris polyphylla</i> -Root	Doodh Bach-Root	***	***	3400	***	***	***
<i>Picrorhiza kurroa</i> -Root	Kutki-Root	2200	***	1900	***	1700	***
<i>Podophyllum hexandrum</i>	Root	***	***	211	***	***	***
<i>Rubia cordifolia</i> -Root	Majith (Nepali)-Root	200	***	155	***	***	***
<i>Sapindus mukorossi</i> -Fruit	Reetha-Fruit	165	65	120	***	90	***
<i>Saussurea costus</i> -Root	Kuth (Bitter)-Root	360	***	600	***	***	***

<i>Solanum nigrum</i> -Seed	Makoidana-Seed	***	***	95	***	91	170
<i>Swertia chirayita</i> -Aerial Part	Chirayita (Wild)-Aerial Part	450	***	300	62	***	***
<i>Thalictrum foliolosum</i> -Root	Pilizari-Root	***	***	435	***	***	***
<i>Tinospora cordifolia</i> -Stem	Gilo-Stem	80	35	28	36	44	***
<i>Valeriana wallichii</i> -Root	Tagar-Root	700	***	410	***	525	***
<i>Withania somnifera</i> -Root	Ashwagandha -Root	520	***	650	380	250	***
<i>Zanthoxylum oxyphyllum</i> -Seed	Timur-Seed	960	***	870	***	***	***

(Source: e-charak, NMPB, 2020)





**Photo plate 1: Medicinal and aromatic plants survey in different villages of Kullu cluster**

#### **4.2 Stakeholder consultation workshop of Kullu cluster**

Stakeholder consultation workshops were organized at Chief Conservator office Kullu and Range Office of Patlikulh. The workshop was attended by Division Forest Officer, ACF, VFDs members, Biodiversity management committee members, range forest officer, villagers of Baragran and Gadiyara VFDs of Bhutti and Sari-II & Balh-II VFDs of Kullu ranges .

Shri Anil Sharma, Chief Conservator of Forest, Kullu chaired the consultation workshop held on 17-12-2020. He emphasised the need of conservation of medicinal plants in the region under JICA funded project. He suggested that selected VFDs needs to provide the details of 2-3 potential medicinal plant species for cultivation for livelihood generation of the local communities. Sh. Pune Ram, DFO also stressed to provide accurate implementation for successful implementation of micro plans for medicinal plant cultivation in the project area. Sh. Manoj, ACF, Kullu suggested that the community will play key role for ground implementation of project activities, therefore they need to come forward to take MAP cultivation opportunity for their livelihood development.

Dr. KS Kanwal, Scientist, GBPNIHE brief about the JICA project MAP assessment, highlighted the significance of MAP in Himalayan region work . He requested to all the participant to provide detail information and suggestions on MAP so that a detail report and practical cluster level plan can be formulated for field implementation. Dr. Kishor Kumar, GBPNIHE also hilghted the significance of MAP conservation and culgtiavtion in the Himachal Pradesh.

After the detail discussion the following species were proposed by the participants for cultivation in Bhutti & Kullu ranges:

**Table 2: MAP species identified for cultivation in Bhutti & Kullu ranges**

<i>Viola canescens</i>	Vanaksha
<i>Taxus contorta</i>	Rakhal
<i>Rosa macrophylla</i>	Gulaab
<i>Trillidium govanianum</i>	Naagchattri
<i>Dioscorea deltoidea</i>	Shingli mingli
<i>Pistacia integerrima</i>	Kakad singhi
<i>Withania somnifera</i>	Ashwagandha
<i>Berberis aristata</i>	Kashambal
<i>Zanthoxylum armatum</i>	Timbar
<i>Nardostachys jatamansi</i>	Nihanu
<i>Bergenia ligulata</i>	Pashan bhed
<i>Aconitum heterophyllum</i>	Patish
<i>Sinopodophyllum hexandrum</i>	Van kakdi
<i>Ajuga bracteosa</i>	Neel kanthi
<i>Aloe barbadensis</i>	Aloe vera
<i>Tinospora cordifolia</i>	Giloy
<i>Cymbopogon citratus</i>	Lemongrass
<i>Rheum australe</i>	Choochi
<i>Picrorhiza Kurroa</i>	Kadu
<i>Asparagus racemosus</i>	Satavri
<i>Polygonatum verticillatum</i>	Sala mishri
<i>Tagetes minuta</i>	Genda





Photo plate 2: Stakeholder consultation workshop held at CF Office, Kullu on 17-12-2020



Photo plate 3: Stakeholder consultation workshop held at CF Office, Kullu on 17-12-2020

**Table 3: List of participants of multi-stakeholder consultation workshop held at CF Office, Kullu on 17-12-2020**

S. No.	Name	Phone Number	Organization/Address
1	Sh. Anil Sharma IFS		CFO Kullu
2	Dr. Man Singh Rana	9418184064	Asst. Prof. Kullu College
3	Sh.Pune Ram	9816057175	DFO Kullu
4	Sh. Manoj		ACF Kullu
5	Sh.Davinder Kumar	8219269125	RO Kullu
6	Dile Ram	9882095058	Majhat
7	Roshani Devi	9418255954	Majhat
8	Sh.Prem Lata	7807155956	Majhat
9	Buddhi Singh	9418718205	Majhat
10	Sundar Singh	9015102137	Baragran
11	Kehar Singh	9459211310	Baragran
12	Pushpa Devi	9888996138	Baragran
13	Balbir Singh	9625166124	BO Tarapur
14	Sant Ram	9816289267	Forest Guard Tarapur
15	Prashant	9459518008	Forest Guard
16	Gulab Chand	9459154457	Balh-II
17	Anjali	8219021713	Balh-II
18	Ramla	9816820297	Balh-II
19	Safu Ram	9459438835	Khopri
20	Om Prakash	8580625517	Khopri
21	Tule Ram	8580434674	Khoni Rupa
22	Hardyal Singh	9459998120	Khoni Rupa
23	Krishna		Baragran
24	Aamari		Baragran
25	Shakuntala	8219565658	Majhat
26	Pradeep Thakur	7018118020	Majhat
27	Sanjay Thakur	7018650940	Majhat
28	Tara Chand	8894402028	Forest Guard
29	Bhuwan Sharma	7018382802	Bhekhali
30	Yuv Raj Singh	9816132073	Bhekhali
31	Raj Dayal	973626010	Dharait
32	Sangita	7018280943	Bhalihani

Second consultation of Kullu range was held at Patlikulh range office. Wherein, forest officials, VFDs, BMC members, villagers of Kaniyal, Palchan, Jana, Bari, Kathi of Manali, Naggar and Patlikhul forest ranges participated.

After the detail discussion the following species were proposed by the participants for Manali, Naggar and Patlikulh ranges:

**Table 4: MAP species identified for cultivatiokn in Manali, Naggar and Patlikulh ranges**

<b>Botanical name</b>	<b>Common name</b>
<i>Picrorhiza kurroa</i>	Kadu
<i>Aconitum heterophyllum</i>	Patish
<i>Berberis aristata</i>	Kashambal
<i>Taxus contorta</i>	Rakhal
<i>Trillidium govanianum</i>	Naagchattri
<i>Viola canescens</i>	Banafsha
<i>Betula utilis</i>	Bhoj patra
<i>Sinopodophyllum hexandrum</i>	Van kakdi
<i>Podophyllum hexandrum</i>	Bankakdi
<i>Dioscorea deltoidea</i>	Shingli mingli
<i>Rheum australe</i>	Choochi
<i>Angelica glauca</i>	Chora
<i>Dactylorhiza hatagirea</i>	Hath panja
<i>Sassurea costus</i>	Kuth





Photo plate 4: Stakeholder consultation workshop held at Patlikulh range office, Kullu held on 15-12-2020





Photo plate 5: Stakeholder consultation workshop held at Patlikulh range office, Kullu held on 15-12-2020

**Table 5: List of participants of multi-stakeholder consultation workshop held at range Office, Patlikulh on 15-12-2020**

<b>S. No.</b>	<b>Name</b>	<b>Phone Number</b>	<b>Address</b>
1	Sh. Bishan Chand	8278798295	RFO Naggar
2	Sh. Saurabh Sharma	9816999978	RO Patlikuhah
3	Neeraj Kumar	9418512000	Forest Guard Manali
4	Tej Singh	9817615209	Forest Guard Manali
5	Tek Singh	7018848126	BO Naggar
6	Narender Tomar	9816683704	Forest Guard Patlikuhah
7	Yog Raj	9418772888	Forest Guard Patlikuhah
8	Man Singh	9816214494	BO Manali
9	Parm Chand	9418953423	Naggar
10	Raju	9816847060	Balsari
11	Chander	9805099749	Forest Guard Neri
12	Lalit	7018582113	Forest Guard Pankot
13	Jaggu Ram	7018731102	BO Palchan
14	Sudarshan	9736310520	Bari
15	Manish	7807078087	Bari
16	Shubham	9041007176	Bari
17	Prem Chand	9736224059	Bari
18	Rakesh	7831921388	Bari
19	Khimi Ram	9805455383	Jana
20	Om Prakash	8580996289	Jana
21	Dabe Ram	8219437749	Jana
22	Gurmeet	9805837303	Forest Guard Jana
23	Khud Ram	8894550265	Kathi
24	Mani Ram	7807286885	Kasta
25	Panne Lal	8091095795	Kukdi
26	Lot Ram	9877373441	Bari
27	Saudagar	9805358105	Kasta
28	Kuram Singh	7018500726	Manali
29	Sandeep Kumar	9418162784	Forest Guard Manali
30	Prem Lal	8894453074	Forest Guard Manali
31	Yash Pal	8219966576	Forest Guard Kangni

After review of existing literature, field survey, stakeholder consultation workshops following species are identified for cultivation in the selected VFDs of Kullu cluster:

**Table 6: MAP species prioritized for cultivation of selected VFDs of Kullu cluster**

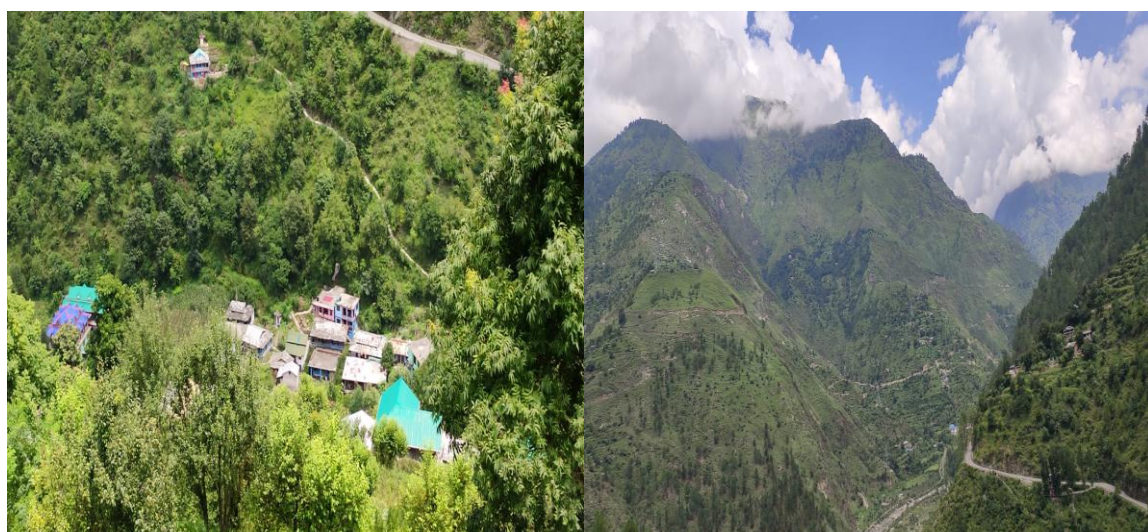
<b>Name of Range</b>	<b>VFDs</b>	<b>Panchayat</b>	<b>Species Name</b>
Manali	Kaniyal	Nasogi	<i>Picorhiza kurroa</i> , <i>Aconitum heterophyllum</i> , <i>Angelica galuca</i> , <i>Taxus contorta</i> , <i>Podophyllum hexandum</i>
	Palchan	Palchan	<i>Picorhiza kurroa</i> , <i>Aconitum heterophyllum</i> , <i>Trillium govarianum</i> , <i>Podophyllum hexandrum</i> , <i>Rheum austral</i> , <i>Taxus contorta</i>
Naggar	Jan Vikas Society, Jana	Jana	<i>Picrorhiza kurroa</i> , <i>Saussurea costus</i> , <i>Aconitum heterophyllum</i> , <i>Angelica glauca</i> , <i>Trillium govarianum</i>
Patlikulh	Bari	Hallan II	<i>Dactylorhiza hatagirea</i> , <i>Picrorhiza kurroa</i> , <i>Bergenia ciliata</i> , <i>Swertia chirayita</i>
	Kathi	Pichilihar	<i>Berberis aristat</i> , <i>Bergenia ciliate</i> , <i>Picrorhiza kurroa</i> , <i>Angelica glauca</i> , <i>Swertia chirayita</i> , <i>Morchella esculenta</i>
Bhutti	Baragran	Brahman	<i>Acorus calamus</i> , <i>Taxus contorta</i> , <i>Asparagus racemosus</i> , <i>Picrorhiza kurroa</i>
	Gadiyara	Majaht	<i>Withania somniferum</i> , <i>Tinospora cordifolia</i> , <i>Aloe barbadensis</i> , <i>Zanthoxylum alatum</i> , <i>Swertia chirayita</i>
Kullu	Sari-II	Sari	<i>Morchella esculenta</i> , <i>Piccorhiza kurroa</i> , <i>Pistacia intergerrima</i> , <i>Angelica glauca</i> , <i>Taxus contorta</i> , <i>Asparagus racemosus</i>
	Balh-II	Balh	<i>Aloe barbadensis</i> , <i>Curcuma longa</i> , <i>Withania sominifera</i> , <i>Viola canescens</i> , <i>Asparagus racemosus</i>

### 4.3 Assessment of Potentiality and Production of Medicinal & Aromatic Plants in Largi Cluster of Kullu District

This cluster comprises of Sainj and Tirthan ranges. The MAP assessment was carried out in the four VFDs viz. Talara, Kanon (located in Sainj range), Chakurtha and Thatibir (located in Tirthan range). Field survey was conducted in the Talara, Kanon, Chakurtha and Thatibir panchayats of the Largi. Location and altitudinal ranges of VFDs of Largi cluster are given in the following table 7 :

**Table 7: Location details of VFDs of Largi cluster**

S.No	Cluster	Range	VFDs	Panchayats	Village	Co-ordinates		Altitude (m)
						Latitude (N)	Longitude (E)	
1	Largi	Tirthan	Thatibir	Chakurtha	Chakurtha	31.7011° N	77.2305° E	2600
2	Largi	Sainj	Kanon	Kanon	Kanon	31°45'23.940	77°16'40.979	1800
3	Largi	Sainj	Talara	Talara	Talara	31.766285	77.265851	1200
4	Largi	Tirthan	Thatibir	Thatibir	Thatibir	31.696739	77.311289	1882



**Photo plate 6: Landscape view of Largi cluster**

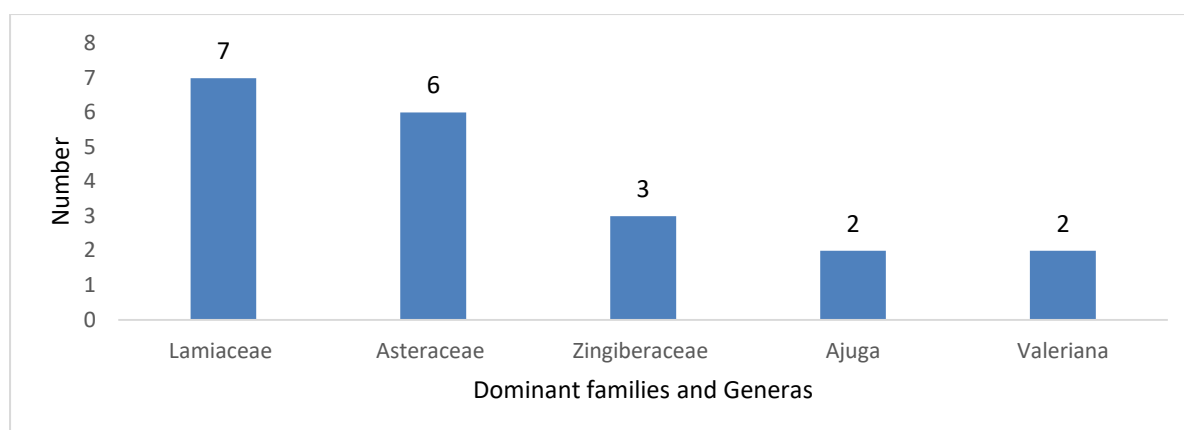
Currently, the villagers of Largi Cluster are not cultivating medicinal plant species in their agriculture/farm land. They mostly collect medicinal plants from wild, majorly for their own medicinal uses. Only a few species such as *Morchela esculanta*, *Angelica glauca*, *Berberis aristata*, *Jurinea macrocephala* and *Rosa moschata* are being traded by the community. A total of 132 respondents from the Largi Cluster were surveyed for the status and potential of medicinal plants in the cluster. A total of 64 medicinal and aromatic plants (Angiosperms – 60, Gymnosperms – 03, Fungi – 01) belonging to 41 families and 60 genera of angiosperms were

recorded during the field survey. Of the total species, 44 species were herbs, 12 shrubs and 07 were trees. . The details have been provided in the Table 8 & Annexure-III.

**Table 8. Taxonomic description of medicinal and aromatic plants of Largi cluster**

	Families	Genera	Species	Tree	Shrubs	Herbs
<b>Angiosperms</b>						
Dicots	28	43	46	5	11	29
Monocots	9	13	14	-	-	14
<b>Gymnosperms</b>						
	3	3	3	2	1	-
<b>Fungi</b>	1	1	1	-	-	1
<b>Total</b>	<b>41</b>	<b>60</b>	<b>64</b>	<b>7</b>	<b>12</b>	<b>44</b>

Among the families, Lamiaceae (07 spp.), Asteraceae (06 spp.), Zingiberaceae (03 spp.), were the dominant families (Fig. 4). Among genera, *Ajuga*, *Valeriana*, were dominant (Fig. 4).

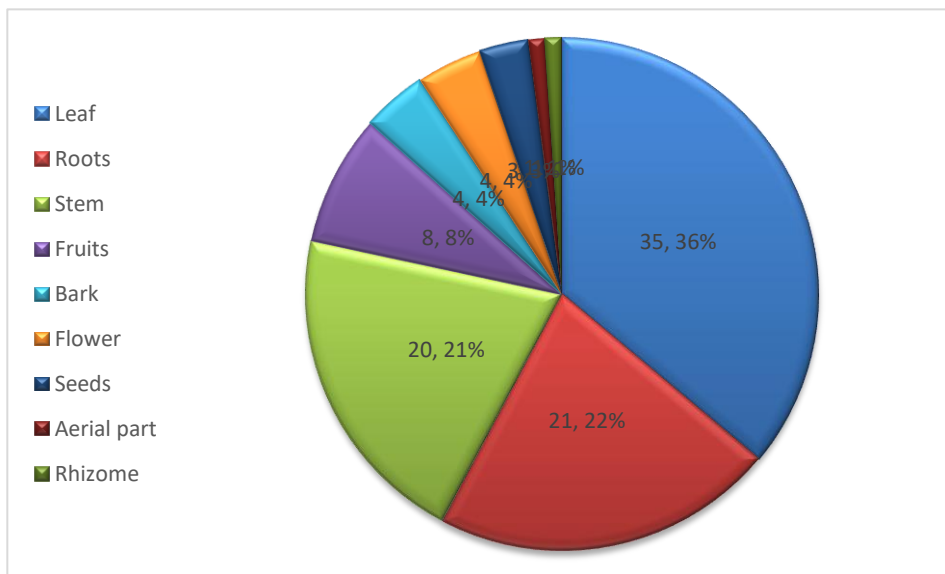


**Fig. 4.** Dominant families and genera of medicinal plants of Largi cluster

Different parts of the plants were utilized, of which the leaf was used in the majority cases (35), followed by roots (21 spp.), stem (20 spp.) each and fruits (08 spp.), bark and flower (04 spp. each), seed (03 spp.) and aerial part and rhizome (01 spp. each). (Fig. 5).

These 64 MAPs were used by local inhabitants for curing various diseases / ailments such as Gastrointestinal and stomach related problems; joint pain, weakness, Skin diseases, cold, cough and fever, Physical strength and well-being, blood related diseases, oral and dental problems,





**Fig. 5.** Statistics of plant part used for medicine

Among the 64 MAPs, 20 high value medicinal plant species are identified. These are as follows *Morchela esculanta*, *Withania somnifera*, *Viola canescens*, *Podophyllum hexandrum*, *Juniperus indica*, *Bacopa monnieri*, *Hedychium spicatum*, *Berberis aristata*, *Saussurea costus*, *Valeriana jatamansi*, *Aconitum heterophyllum*, *Angelica glauca*, *Dactylorhiza hatagirea*, *Picrorhiza kurroa*, *Asparagus filicinus*, *Cinnamomum tamala*, *Zanthoxylum armanatum*, *Thalictrum foliolosum*, *Polygonatum verticillatum*, *Dioscorea deltoidea*. Out of this few potential species would be selected for large scale cultivation in the farmers as well forest land of Largi Cluster.



**Photographs from Kanon panchayat in Largi Cluster**



**Photographs from Chakurtha Panchayat**

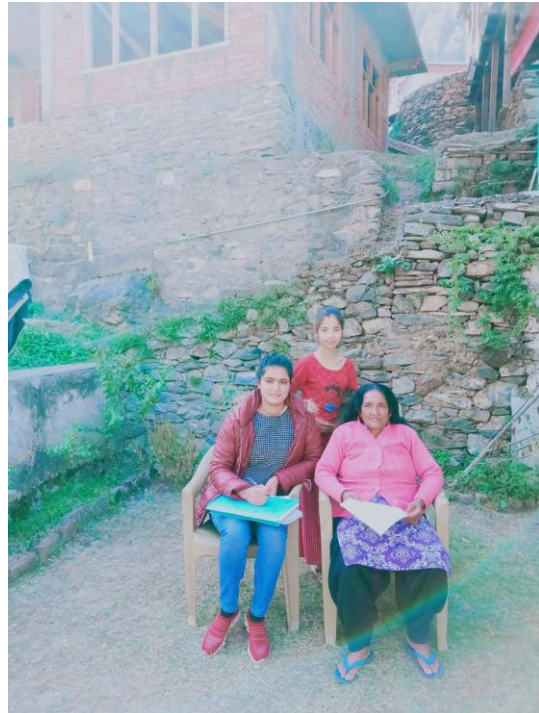


**Photographs from Talara Panchayat**



**Photographs from Thatibir Panchayat**





**Photo plate 7: Medicinal and aromatic plants survey in the Largi Cluster of Kullu district**

#### 4.4 Stakeholder consultation workshop of Largi cluster

Stakeholder consultation workshops were organized at Chakurtha Panchayat, Panchayat Community Hall Largi for Sainj and Tirthan ranges of Largi Cluster on 07-12-2020 and 08-12-2020, respectively. The workshop was attended by Range Forest Officers, BOs, VFDs members, Biodiversity management committee members, villagers of Chakurtha, Thatibir, Kanon and Talara panchayats of Largi ranges. Dr. KS Kanwal, Scientist, GBPNIHE brief about the JICA project MAP assessment, highlighted the significance of MAP in Himalayan region work. He requested to all the participant to provide detail information and suggestions on MAP so that a detail report and practical cluster level plan can be formulated for field implementation.

After the detail discussion the following species were proposed by the participants for Sainj and Tirthan ranges of Largi cluster:

**Table 9: MAP species identified for Sainj and Tirthan ranges of Largi cluster**

Botanical name	Local name
<i>Withania somnifera</i>	Ashwgandha
<i>Thymus linearis</i>	Ban ajwain
<i>Hedychium spicatum</i>	Ban haldi
<i>Origanum vulgare</i>	Ban tulsi
<i>Viola canescens</i>	Banafsha
<i>Podophyllum hexandrum</i>	Bankakdi
<i>Bacopa monnieri</i>	Brahmi
<i>Swertia chirayita</i>	Charaeta (daniya )
<i>Angelica glauca</i>	Chora
<i>Berberis aristata</i>	Daduhaldi/Kshambhal
<i>Morchela esculanta</i>	Gucchi
<i>Curcuma longa</i>	Haldi
<i>Dactylorhiza hatagirea</i>	Hath panja
<i>Picrorhiza kurroa</i>	Kaddu
<i>Pistacia integerrima</i>	Kakad shingi
<i>Aloe barbadensis miller.</i>	Kawarpattha
<i>Trillium govanianum</i>	Nagchhatri
<i>Valeriana jatamansi</i>	Nenu, Mushakbala
<i>Valeriana hardwickii</i>	Nihani
<i>Aconitum heterophyllum</i>	Patish
<i>Galinsoga parviflora</i>	Peplu ghans
<i>Taxus baccata</i>	Rakhal
<i>Polygonatum verticillatum</i>	Salam mishri
<i>Dioscorea deltoidea</i>	Shingli mingli









Photo plate 8: Stakeholder consultation workshop held at Chakurtha panchayat on 07-12-2020







Photo plate 9: Stakeholder consultation workshop of Tirthan range held on 08-12-2020







Photo plate 10: Stakeholder consultation workshop of Sainj range held on 08-12-2020



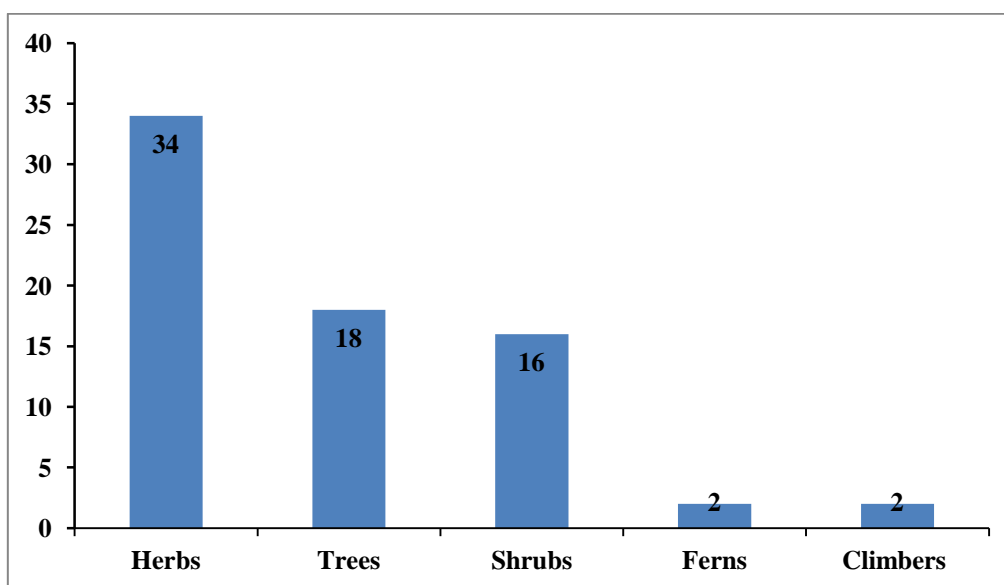
After review of existing literature, field survey, stakeholder consultation workshops following species are identified for cultivation in the selected VFDs of Lارجي cluster:

Table 10: MAP species prioritized for cultivation of selected VFDs of Larji cluster:

<b>Name of Range</b>	<b>VFDs/</b>	<b>Panchayat</b>	<b>Species Name</b>
Sainj	Talara	Talara	<i>Picorhiza kurroa</i> , <i>Aconitum heterophyllum</i> , <i>Angelica galuca</i> , <i>Taxus contorta</i> , <i>Podophyllum hexandum</i> , <i>Valeriana jatamansi</i>
	Kanon	Kanon	<i>Picorhiza kurroa</i> , <i>Aconitum heterophyllum</i> , <i>Trillium govarianum</i> , <i>Bacopa monnieri</i> , <i>Polygonatum verticillatum</i>
Tirthan	Chakurtha	Chakurtha	<i>Picrorhiza kurroa</i> , <i>Saussurea costus</i> , <i>Aconitum heterophyllum</i> , <i>Angelica glauca</i> , <i>Jurinea macrocephala</i>
	Thatibir	Thatibir	<i>Dactylorhiza hatagirea</i> , <i>Picrorhiza kurroa</i> , <i>Bergenia ciliate</i> , <i>Polygonatum verticillatum</i>

#### 4.5 Assessment of Potentiality and Production of Medicinal & Aromatic Plants of Jari Cluster (Khonkan -2, Kapil Muni, Chhman, Upper Jia)

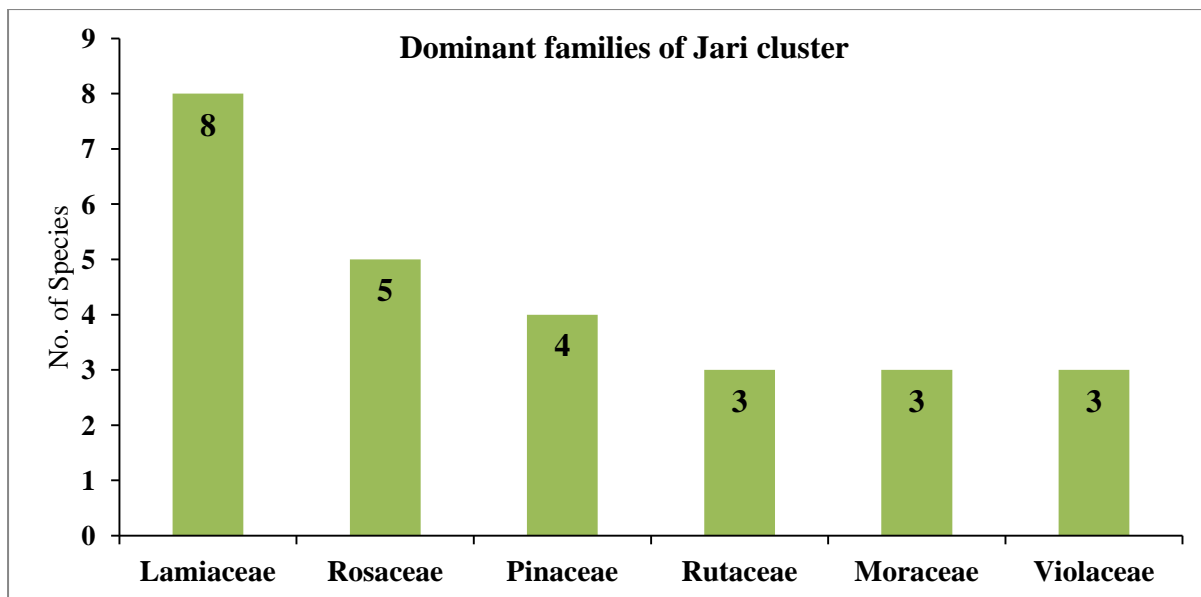
Jari cluster comprises 4 ranges viz. Khokhan -2, Kapil Muni, Chhman, and Upper Jia ranges. MAP assessment was carried out in the 4 VFDs/Panchayats viz. Khokhan-2, Kapil Muni, Chhman, and Upper Jia of Jari Cluster. A total 45 respondents were surveyed for status and potential of medicinal plants in the cluster. A total of 72 medicinal and aromatic plants belonging to 35 families were recorded during the survey. Out of these, 18 species were trees, 34 herbs, 18 shrubs, 2 ferns and 2 climbers (Fig 6). Among the families, Lamiaceae (8 spp.), Rosaceae (5 spp.), Pinaceae (4 spp.), Rutaceae (3 spp.), Moracea (3 spp.), Violaceae (3 spp.) are dominant (Fig. 7)



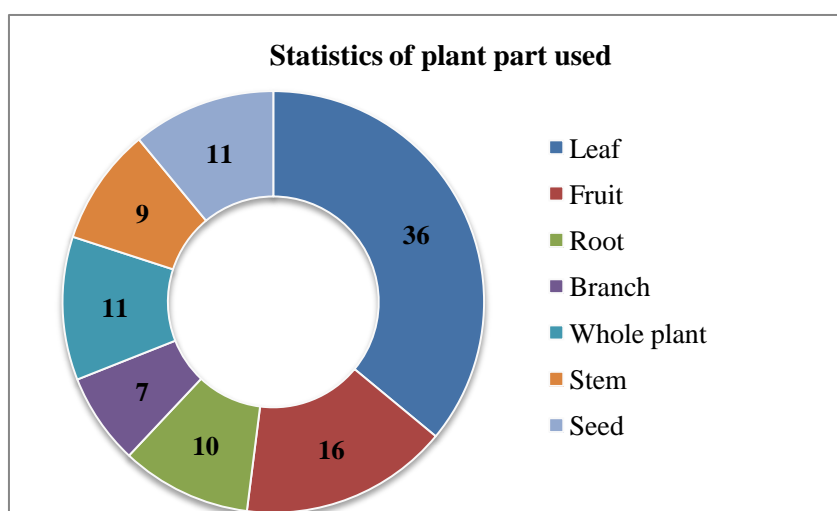
**Fig. 6: Taxonomic description of Medicinal plants of Jari Cluster**

Different parts of the plants were utilized, of which the leaf was used in the majority cases (36), followed by fruit (16 spp.), branch and whole plant (11 spp.), seed (10 spp.), stem (9 spp.) and branch (7 spp.) [Fig. 8].

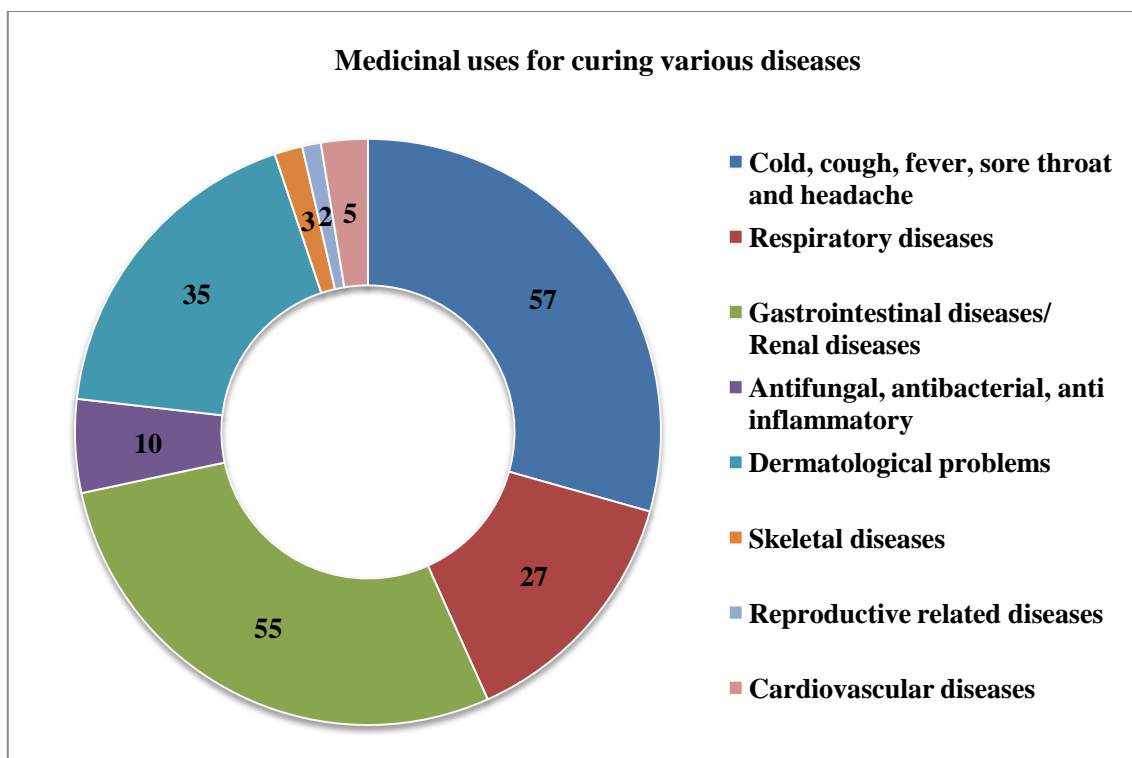
These 72 MAPs were used by local inhabitants for curing various diseases / ailments, and categorized into 8 broad categories i.e., Cold, cough, fever, sore throat and headache (29%), Respiratory diseases (14%), Gastrointestinal diseases/ Renal diseases (28%), Antifungal, antibacterial, anti-inflammatory (5%), Dermatological problems (18%), Skeletal diseases (2%), Reproductive related diseases (1%), and Cardiovascular diseases (3%) [Fig. 9].



**Fig. 7: Dominant families of medicinal plants of Jari Cluster**



**Fig. 8: Statistics of plant parts used in Jari Cluster**



**Fig. 9: Medicinal uses for curing various diseases of MAPs in Jari cluster**

Currently, the villagers of Jari Cluster are not cultivating medicinal plant species in their agricultural/farm land. Community is mainly dependent on the cash crop cultivation such as vegetables, horticulture fruits. They mostly collect medicinal plants from wild majorly for their own medicinal uses. Only a few species such as *Berberis aristata*, *Morchella esculenta*, *Angelica glauca*, *Taxus baccata*, *Bergenia ligulata*, *Rubia cordifolia*, *Viola canescens*, *Zanthoxylum alatum*, etc. are being collected from wild by the community for their own consumption.

Among the 72 MAPs, the following high value medicinal plant species are identified from the study area: *Morchella esculenta*, *Zanthoxylum armatum*, *Angelica glauca*, *Acorus calamus*, *Viola pilosa*, *Taxus contorta*, *Dioscorea deltoidea*, *Bergenia ligulata* and *Origanum vulgare*.



*Angelica glauca*



*Aconitum heterophyllum*



*Rheum australe*



*Sinopodophyllum hexandrum*



*Bergenia ligulata*



*Taxus contorta*

**Photo plate: Medicinal diversity in Jari cluster**

#### 4.6 Stakeholder consultation workshop of Jari cluster

Stakeholder consultation workshops were organized at forest office, Parvati Forest Division , Shamshi, Kullu. The workshop was chaired by Sh. Padam Singh Chauhan, Retired Division Forest Officer (niw working in JICA project), RFO- Bhuntar, RFO- Hurla, BO-Bajaura, VFDs members, Biodiversity management committee members, and villagers of Hurla and Khokhan, Bashona, Bhuntar representing to Kapil Muni, Chhman, Khokhan -2, and Upper Jia VFDs of Jari ranges on 11-12-2020..

Shri Padam Singh Chauhan emphasised the need of conservation of medicinal plants in the region under JICA funded project. He suggested that selected VFDs needs to provide the details of 2-3 potential medicinal plant species for cultivation for livelihood generation of the local communities. Dr. Man Singh Rana, Assistant Professor, Govt. Degree Collge, Kullu, Himachal Pradesh highlighted the significance of MAP conservation, prioritization and cultivation of potential aromatic and medicinal plants in the Himachal Pradesh. He mentioned that there are around 643 species of medicinal plants recorded from Himachal Pradesh. Out of these medicinal some species have very high value and can cultivated by the community for their livelihood development.

Dr. KS Kanwal, Scientist, GBPNHE brief about the JICA project MAP assessment, highlighted the significance of MAP in Himalayan region work. He requested to all the participants to provide detail information and suggestions on MAP so that a detail report and practical cluster level plan can be formulated for field implementation.

After the detail discussion the following species were proposed by the participants for cultivation in Bhuntar, Hurla and Jari ranges of Jari cluster

**Table 11: MAP species prioritized for cultivation of selected VFDs of Jari cluster**

Name of Range	VFDs	Panchayat	Species Name
Bhunter	Khokan-2	Khokan	<i>Valerian jatamansi, Polygonatum verticillatum, Berberis aristata, Withania somnifera, Pistacia intergerrima, Curcuma longa, Viola canescens</i>
Hurla	Kapil Muni	Bashona	<i>Viola canescens, Rosa macrophylla, Withania somnifera, Zanthoxylum armatum, Aloe barbadensis</i>
Jari	Chhman	Danegi	<i>Tinospora cordifolia, Taxus cordata, Bergenia ciliata, Swertia chirayita</i>
	Upper Jia	Jia	<i>Berberis aristat, Bergenia ciliata, Polygonatum verticillatum, Viola canescens</i>





**Photo plate 2: Stakeholder consultation workshop held at Forest Office, Shamshi, Kullu on 11-12-2020**

**Table 12: List of participants of multi-stakeholder consultation workshop held at Forest Office, Parvati Range, Shamshi, Kullu on 11-12-2020**

S. No.	Name	Organization/Address	Contact details
1	Padam Singh Chauhan	Retd. DFO, HPFD	9418107606
2	Dr. Man Singh Rana	Asst. Prof. Kullu College	9418184064
3	Manohar Lal	RFO Bhuntar	7018160183
4	Sunil Kumar	BO Bajaura	9418460275
5	Sunder Lal	RFO Hurla	9418956403
6	Sam Dev	Bhuntar	8219190672
7	Neeraj Sharma	Hurla	9816325078
8	Bimla Sharma	Bashona	9418979415
9	Subodh Negi	JICA	7018196156
10	Kamlesh Kumar	JICA	9816145555
11	Krishna Devi	Khokhan	9817060931
12	Chintu Moni	Khokhan	8580615224
13	Dass	Khokhan	9805415701
14	Ratkam Ram	Khokhan	858085596
15	Devi Chand	Khokhan	9857775368
16	Ahalya	Bashona	7018080119
17	Dhanwant Singh	Bashona	9418018464
18	Din Dayal	Bashona	9418461373
19	Dr. K.S. Kanwal	GBPNIHE,HRC, Mohal	
20	Ms. Shivani Parmar	GBPNIHE,HRC, Mohal	
21	Mr. Priyadarshan Pandey	GBPNIHE,HRC, Mohal	
22	Mr. Karam Das Thakur	GBPNIHE,HRC, Mohal	

#### **4.7 Assessment of Potentiality and Production of Medicinal & Aromatic Plants in Keylong Cluster of Lahaul & Spiti, District**

This cluster comprises of Keylong and Pattan ranges of Lahaul & Spiti district. The MAP assessment was carried out in the two VFDs viz. Ropsang, Yoche (located in Keylong range) and Kamring VFDs of Pattan ranges. Medicinal plant assessment study was conducted in the Sissu & Darocha, Mooling panchayats of the Keylong and Pattan ranges. Due to COVID-19 pandemic problem in Lahaul & Spiti district, some villages of Lahaul valley had not allowed for field survey and consultation workshop, therefore their views were taken through telephonic discussion.

#### **Floristic diversity of Keylong cluster of Lahaul valley, Himachal Pradesh**

A total 251 species of the medicinal vascular plants (i.e., Angiosperms, Gymnosperms and Pteridophytes) belonging to 148 genera and 54 families were recorded from study area. Of these, 14 were trees, 20 shrubs, 215 herbs and 02 ferns. The taxonomic description of the species has been presented in Table 13.

Table 13. Taxonomic description of medicinal plants in selected area of Lahaul valley



Taxonomic groups	Families	Genera	Species	Trees	Shrubs	Herbs Ferns
Angiosperms	51	145	246	13	18	215
Gymnosperms	2	2	3	1	2	- -
Pteridophytes	1	1	2	-	-	2

### Dominant Families of Medicinal plants in selected area of Lahaul valley

Amongst families, Asteraceae (47 spp.); Polygonaceae (16 spp.); Apiaceae; Ranunculaceae and Lamiaceae (15 spp. each); Fabaceae; (14 spp.); Rosaceae; (11 spp.); Caryophyllaceae (09 spp.) Boraginacea (08 spp.); Brassicaceae; and Scrophulariaceae (07 spp each.); Complanulaceae (06 spp.); and Chenopodiaceae and Gentianaceae (05 spp. each) were the dominant (Fig 10) . Twenty one families were found to be monotypic with only single species these families were Adiantaceae, Alliaceae, Betulaceae, Cannabaceae, Caprifoliaceae, Crassulaceae, Cupressaceae, Ephedraceae, Equisetaceae, Grossulariaceae, Hydrangeaceae, Juglandaceae, Iridaceae, Oleaceae, Onagraceae, Papaveraceae, Pinaceae, Podophyllaceae, Selaginaceae, Tamaricaceae and Urticaceae (Annexure).

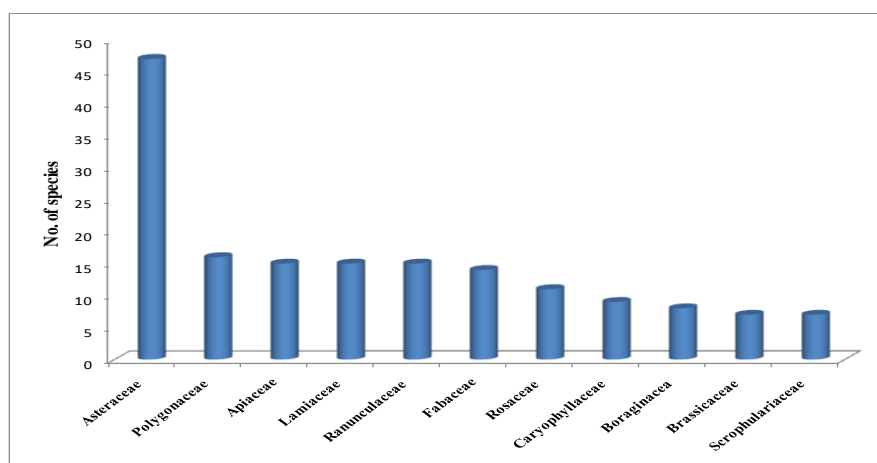


Fig.10: Dominant Families of Medicinal plants in selected area of Lahaul valley

### Dominant Genera of Medicinal plants in selected area of Lahaul valley

Among genera, *Artemisia* (12 spp.), *Polygonum* (07 spp.), *Sagina*, *Nepeta* and *Thalictrum* (06 spp. each), *Senecio*, *Chenopodium* and *Astragalus* (05 spp., each), *Saussurea*, *Polygonatum* and *Anemone* (04 spp. each), *Chaerophyllum*, *Selinum*, *Berberies*, *Erigeron*, *Codonopsis*, *Swertia*, *Geranium*, *Plantago*, *Rumex*, *Cotoneaster*, *Prunus* and *Salix* were the dominant (Fig 11).

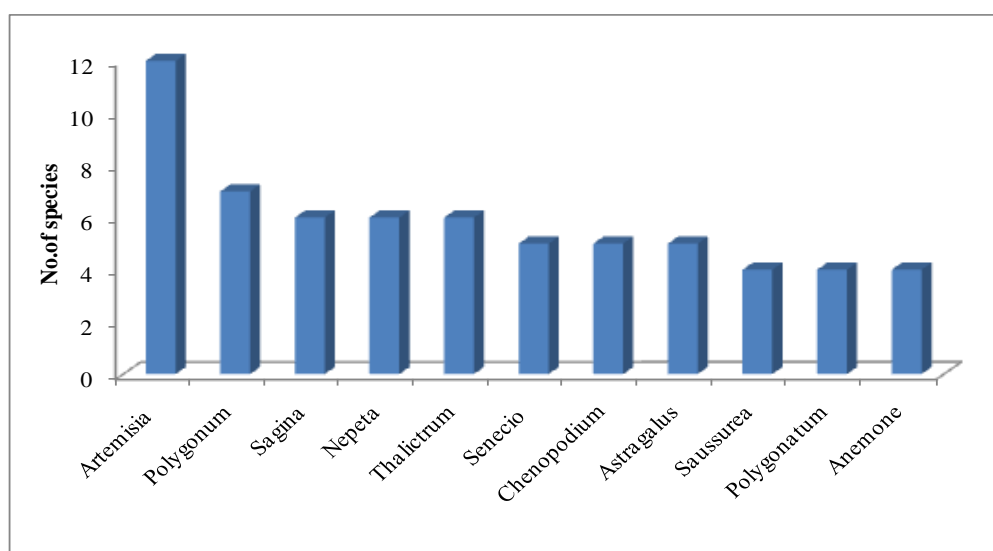


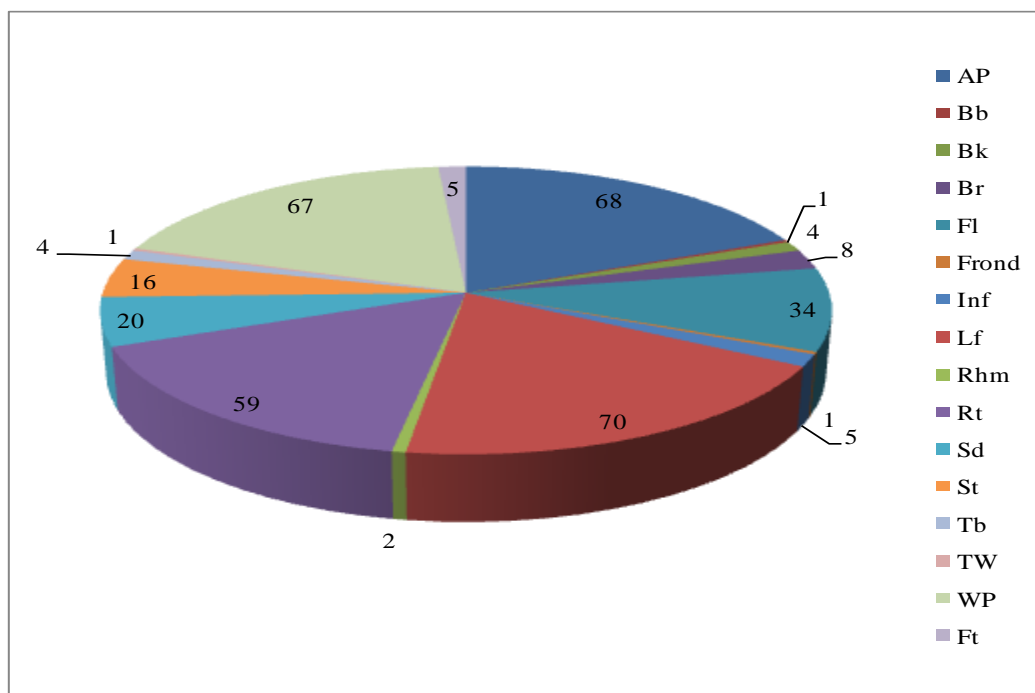
Fig. 11: Dominant Genera of Medicinal plants in selected area of Lahaul valley

### Indigenous uses of Medicinal plants in selected area of Lahaul valley

Among the various plant parts used, leaves of maximum species (70 spp.) were used, followed by aerial parts (68 spp.), whole plant (67 spp.), roots (59 spp.), flower (34 spp.), seed (20 spp.), stem (16 spp.), Branch (08 spp.) inflorescence and fruit (05 spp.) etc (Fig 12).

These plant parts were used for curing various diseases/ailments. For example, seeds of *Bunium persicum* were used in abdominal pain, loss of appetite, back pain, liver problems, dysentery in domestic animals; seeds and flowers of *Codonopsis clematidea* in rheumatism, swelling due to sprain and skin disease; leaves of *Artemisia maritima* for curing general weakness, remove abdominal parasites, antihelminthic, antiseptic, blood purifier, gastric disorder and smoke purifier; roots of *Arnebia euchroma* as abortifacient and hair tonic; whole plant of *Hippophae rhamnoides* in aphrodisiac, lung disease, indigestion, oxytoxic and tonic; *Ephedra gerardiana* in asthma, blood purification, cardiac ailment, cough, chronic bronchitis, headache, hepatic disease, pneumonia fever, rheumatism and snuff and roots and leaves of *Bergenia stracheyi* in kidney stone, poultice, stiff joint, diuretic, antiscorbutic, astringent,

fever, ophthalmia, tonic, cuts, and wounds. The remaining species were used for the treatment of various diseases/ailments.



**Fig. 12: Statistics of the plant part used**

**Abbreviations used:** Rt= Root; AP= Arial Part; Sd= Seed; WP= Whole Plant; Lf= Leaf; Fl= Flower; Rhm= Rhizome; Fr= Fruit; Inf= Inflorescence; St= Stem; Br= Branch; Bk= Bark; Tb= Tuber; Bb= Bulb; andTw= Twigs

#### 4.8 Stakeholder consultation workshop of Keylong cluster

Stakeholder consultation workshop was organized at forest range office, Jahalma, Keylong, Lahaul&Spiti on 18-12-2020. The workshop was attended by Forest Range Officer, Beat Officer VFDs members, Biodiversity management committee members, and villagers of Jalma representing to Ropsang&Yoche ranges.

Shri Mast Ram, Range Forest Officer, Jahalma, highlighted the need of conservation and cultivation of medicinal plants particularly for livelihood development in Lahaul valley. He suggested that selected VFDs need to provide the details of 2-3 potential medicinal plant species for cultivation for livelihood generation of the local communities.

Dr. KS Kanwal, Scientist, GBPNHIE brief about the JICA project MAP assessment, highlighted the significance of MAP in Himalayan region work. He requested to all the participants to provide detail information and suggestions on MAP so that a detail report and practical cluster level plan can be formulated for field implementation. Dr.Kishor Kumar, highlighted the significance of MAP conservation, prioritization and cultivation of potential aromatic and medicinal plants in the Himachal Pradesh.

**Table 14: MAP species prioritized for cultivation of selected VFDs of Keylong cluster**

Name of Range	VFDs	Panchayat	Species Name
Keylong	Ropsang	Sissu	<i>Sassurea costus</i> , <i>Picrorhiza kurroa</i> , <i>Hippophae rhamnoides</i>
	Yoche	Daroha	<i>Sassurea costus</i> , <i>Aconitum heterophyllum</i> , <i>Picrorhiza kurroa</i> , <i>Inula racemosa</i> , <i>Bunium persicum</i>
Pattan	Kamring	Mooling	<i>Inula racemosa</i> , <i>Sassurea costus</i> , <i>Aconitum heterophyllum</i> , <i>Picrorhiza kurroa</i> , <i>Hippophae rhamnoides</i>



Photo plate : Discussion with Range Forest Officer, Jahalma Ragne on 18-12-2020

**Table 15: List of participants of multi-stakeholder consultation workshop held at Forest Range Office, Jalma, Keylong, Lahaul&Spiti on18-12-2020**



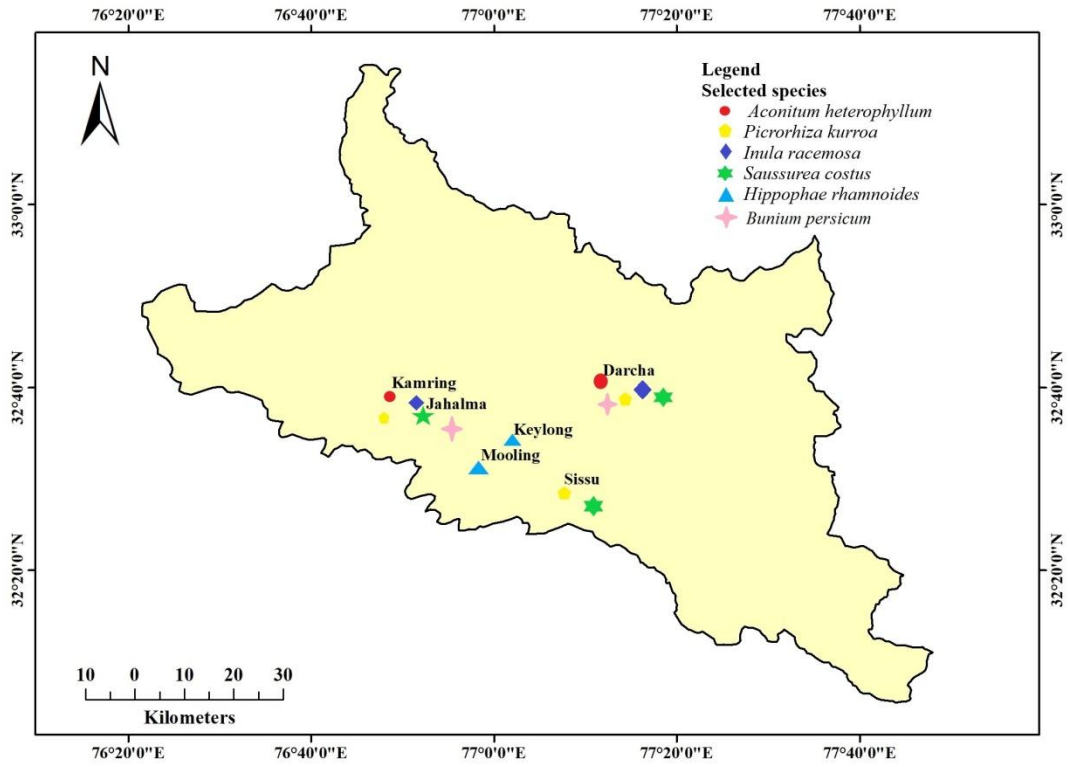
<b>S.No.</b>	<b>Name</b>	<b>Phone Number</b>	<b>Address</b>
1.	Shanlit Singh	9459248620	Jahalma
2.	Birbal Chand	9418356287	Jahalma
3.	Shamsher Singh	9459828668	Jahalma
4.	D Nalda	9418204379	Jahalma
5.	Padam Dev	9418433189	Jahalma
6.	Shiv Lal	9459124685	Jahalma
7.	Dinesh Kumar	9459996895	Jahalma
8.	Suresh Kumar	9459887318	Jahalma
9.	Rajendra	9459248551	Jahalma
10.	Ranjeet Singh	9418909176	Jahalma
11.	Sushil	9418971686	Jahalma
12.	Rajendra	9418611992	Jahalma
13.	Kunj Lal	9418845680	Jahalma
14.	Govind	9418543085	Jahalma
15.	Pawan Kumar	9418270166	Jahalma
16.	Keval Kunj	9418433891	Jahalma
17.	Rajeev Kumar	9418437531	Jahalma
18.	Ajit Kumar	9418607036	Jahalma
19.	Roshan Lal	9418411833	Jahalma
20.	Prabhat Chand	9418442696	Jahalma
21.	Ram Kishan	9459916044	Jahalma
22.	Sanjeev	9418388428	Jahalma
23.	Rajeev	9418720288	Jahalma
24.	Sunil Kumar	8988881391	Jahalma
25.	Pushpendra Sharma	9459784213	Jahalma
26.	Dinesh Kumar	-	Jahalma
27.	Suresh Kumar	9418660018	Jahalma
28.	Basant Lal	8988232360	Jahalma
29.	Kunj	8988952550	Jahalma
30.	Hem Raj Negi	8988423721	Jahalma
31.	Mast Ram	9418429864	Jahalma
32.	Khira Mam	9459187099	Jahalma
33.	Kheem Singh	8488020580	Jahalma
34.	Devi Raj	9418972845	Jahalma
35.	Rajkumar	9418464778	Jahalma

**5.0 Species shortlisted for each cluster (Representing the assessed VFDS/Panchayat/Ranges)**

Based on review of literature, field survey of study area, interviews of vaidays/traditional healers, multi stakeholder consultation and discussion with subject experts the following species have been selected for each cluster for cultivation in Kullu and Lahaul & Spiti district (Table 6):

Table 16: species shortlisted for each cluster for cultivation for each cluster

S.No.	Name of Cluster	Priortized species
1	Kullu	<ul style="list-style-type: none"> <li>i. <i>Picrorhiza kurroa</i></li> <li>ii. <i>Angelica galuca</i></li> <li>iii. <i>Berberis aristata</i></li> <li>iv. <i>Trillium govanianum</i></li> <li>v. <i>Dactylorhiza hatagirea</i></li> <li>vi. <i>Hedychium spicatum</i></li> </ul>
2	Jari	<ul style="list-style-type: none"> <li>i. <i>Aloe barbadensis</i></li> <li>ii. <i>Polygonatum verticillatum</i></li> <li>iii. <i>Viola canescens</i></li> <li>iv. <i>Bergenia ciliata,</i></li> <li>v. <i>Withania somnifera</i></li> </ul>
3	Larji	<ul style="list-style-type: none"> <li>i. <i>Picorhiza kurroa</i></li> <li>ii. <i>Aconitum heterophyllum</i></li> <li>iii. <i>Nardostachys jatamansi</i></li> <li>iv. <i>Taxus contorta</i></li> <li>v. <i>Jurinea macrocephala</i></li> <li>vi. <i>Valerian jatamansi</i></li> </ul>
4	Keylong	<ul style="list-style-type: none"> <li>i. <i>Inula racemosa</i></li> <li>ii. <i>Sausurea costus</i></li> <li>iii. <i>Hippophae rhamnoides</i></li> <li>iv. <i>Picrorhiza kurroa</i></li> <li>v. <i>Bunium persicum</i></li> <li>vi. <i>Aconitum heterophyllum</i></li> </ul>



**Fig. 13: Distribution of selected species of Keylong Cluster of Lahaul & Spiti District**

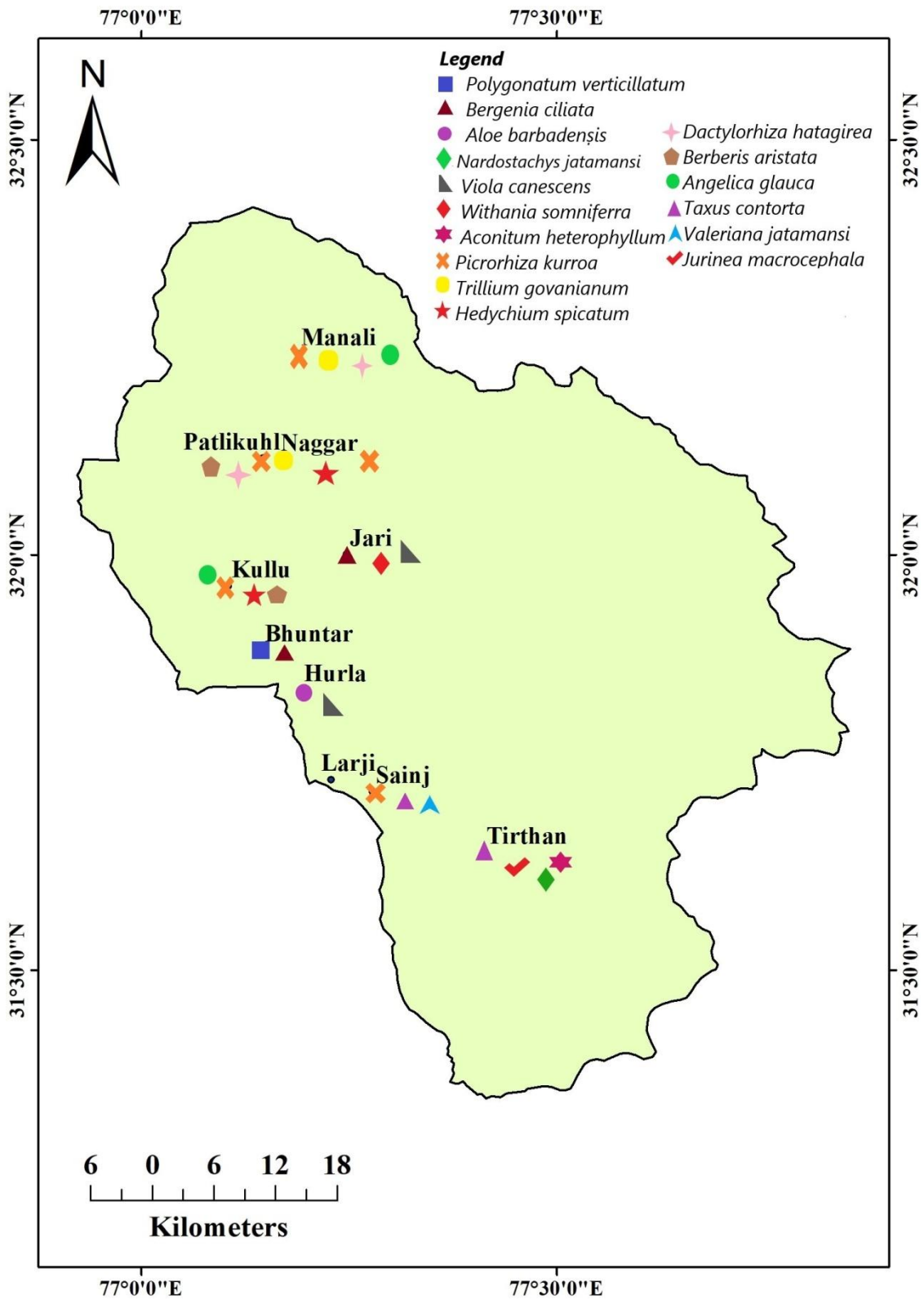


Fig.14: Distribution of selected species of Kullu, Jari & Larji Clusters of Kullu District



## Annexure-II

**Medicinal plants used by the local community in Kullu Cluster (Balh, Brahman, Hallan II, Jana, Pichhalihar, Palchan, Nasogi, Majhat and Sari VFDs/Panchayats)**

S.No.	Botanical Name	Family	Local Name	Life Form	Part used	Medicinal Uses	Name of Panchayat/VFDs
1	<i>Abelmoschus esculentus</i>	Malvaceae	Bhindi	Shrub	Sd	Catarrhal infections, dysuria, wounds	Majhat
2	<i>Abies pindrow</i>	Pinaceae	Tosh	Tree	Br	Medicinal (Fever, asthma, bronchitis)	
3	<i>Achyranthes aspera</i>	Amaranthaceae	Puthkanda	Herb	WP	Medicinal (Asthma, boils, bronchitis, cold, cough, dysentery, germicide, headache, laxative leucoderma, piles, pneumonia, rheumatism, scabies, skin diseases, sore, stomachache, tonic, toothache, whooping cough, wounds, veterinary diseases); Edible	Jana
4	<i>Achyranthes bidentata</i>	Amaranthaceae	Puthkanda	Herb	WP	Medicinal (Blisters in mouth, cholera, scorpion sting, swelling, whooping cough)	Jana
5	<i>Aconitum heterophyllum</i>	Ranunculaceae	Patish	Herb	Rt	Medicinal (Antihelminthic, cough, diarrhoea, digestive complaints, dysentery, fever, gastric, stomachache, vomiting)	Jana, Pichhalihar, Palchan, Nasogi
6	<i>Acorus calamus</i>	Acoraceae	Barin/ Bauch	Herb	Rh, St, Lf	Medicinal (Abdominal pain, asthma, bodyache, bronchitis, cold, cough, cuts, dysentery, epilepsy, fever, headache, hysteria, inflammation, malaria,	Jana , Majhat, Sari

						pain in neck, skin diseases, snake bite, stomachache, teething in children, tonic, veterinary medicine)	
7	<i>Aesculus indica</i>	Sapindaceae	Khanor	Tree	Sd	Excessive bleeding during menstruation.	Palchan, Nasogi
8	<i>Ajuga bracteosa</i>	Lamiaceae	Neel kanthi	Herb	Lf, Wp	Medicinal (malarial fever, tonic, astringent, febrifuge)	Majhat, Jana, Palchan, Nasogi
9	<i>Allium cepa</i>	Alliaceae	Pyaz	Herb	Sd, Lf	Ear pain (Juice of <i>Allium cepa</i> is used as ear drop), indigestion	Majhat
10	<i>Allium humile</i>	Alliaceae	Farn	Herb	Lf	Medicinal (Digestion); Edible (flavor)	Jana
11	<i>Allium sativum</i>	Alliaceae	Lahsun	Herb	Bb	Medicinal (cloves crushed with mustered oil and used for joint pain, Juice mixed with honey taken orally cures coughs, asthma, and abdominal pain and chest congestion)	Brahman, Majhat, Palchan
12	<i>Allium sp.</i>	Liliaceae	Lehsun	Shrub	Br	Cough, Cold and immunity booster	Nasogi, Sari
13	<i>Allium sp.</i>	Amaryllidaceae	Dunu	Herb	Lf, Fl, Sd	Medicinal (Pectoral diseases); Edible	Pichhalihar
14	<i>Allium wallichii</i>	Alliaceae		Herb	Lf, Bb	Medicinal (Pectoral diseases); Edible	Jana
15	<i>Alnus nitida</i>	Betulaceae	Koish	Tree	Lf, St	Medicinal (Cuts, wounds, stomachache)	Jana
16	<i>Aloe barbadensis</i>	Asphodelaceae	Aloe vera	Herb	Lf	Medicinal (Aloe vera gel is used as skin moisturizer and is good for hair and skin health)	Balh, Nasogi ,
17	<i>Aloe vera</i>	Liliaceae	Alovera	Herb	Lf	Skin burn, sun burn	Sari

18	<i>Amaranthus viridis</i>	Amaranthaceae	Sariyara	Herb	AP	Medicinal (Digestion, snake bite); Edible; Fodder	Jana
19	<i>Anacyclus pyrethrum</i>	Asteraceae	Akarkra	Shrub	Lf	Medicinal (It is used in tooth and gums related problems and to reduce foul smell of mouth)	Balh
20	<i>Anaphalis spp</i>	Asteraceae	Bacha	Herb	Lf, Fl	Cold, cough	Pichhalihar
21	<i>Angelica glauca</i>	Apiaceae	Chora	Herb	Rt	Medicinal (Gastric, Dysentery, Stomach related problems, Vomiting); Edible	Brahman, Pichhalihar , Jana, Palchan, Nasogi, Sari
22	<i>Aralia cachemirica</i>	Araliaceae	Bail chaura	Herb	Rt	Medicinal (Dysentery, gastric complaints, vomiting); Edible ( As spice)	Jana
23	<i>Arctium lappa</i>	Asteraceae	NakliKuth	Herb	Rt	Medicinal (Gastric, burns); Misc.(Repels rodents)	Jana, Majhat
24	<i>Arisaema flavum</i>	Araceae	Kiraaloo	Herb	Bb	Medicinal (Ringworm and other skin diseases)	Jana
25	<i>Arisaema tortuosum</i>	Araceae	Kiraaloo	Herb	WP	Medicinal (Veterinary diseases)	Jana
26	<i>Asparagus filicinus</i>	Asparagaceae	Shatavari	Shrub	WP	Medicinal (Urinary problems); Religious	Jana
27	<i>Asparagus racemosus</i>	Asparagaceae	Sansarpali	Shrub	Tu	Medicinal (Anthelmintic, aphrodisiac, rheumatism, bleeding from nose, cough, dysentery, febrifuge, gastric complaints, gonorrhoea, headache, menstrual complaints, snake bite, stomachache, tonic, urine complaints); Edible	Jana
28	<i>Berberis aristata</i>	Berberidaceae	Kashambal	Shrub	Rt, Fr, Wd	Medicinal (Roots are boiled and water is consumed to lower the blood pressure), (Snake bite,	Balh, Nasogi, Brahman, , Jana , Palchan , Sari ,

						boils, eye complaints)	
29	<i>Berberis asiatica</i>	Berberidaceae	Kshambal	Shrub	WP	Medicinal (Antidote to snake bite, eye complaints, malaria, piles); Edible; Religious	Jana
30	<i>Berberis lycium</i>	Berberidaceae	Kashambal	Shrub	Rt, Fr, Wd	Medicinal (snake bite, boils, eye complaints)	Majhat , Jana
31	<i>Bergenia ciliata</i>	Saxifragaceae	PashanBhed	Herb	Rt, Lf	Medicinal (Asthma, boils, cuts, wounds, burns, fever, liver complaints, ophthalmia, piles, kidney stones, urine complaints, diarrhoea of cattles)	Brahman, Jana, Majhat, Pichhalihar
32	<i>Bergenia stracheyi</i>	Saxifragaceae	PashanBhed	Herb	Rt, Lf	Medicinal (Asthma, boils, cuts, wounds, burns, fever, liver complaints, ophthalmia, piles, thirst, kidney stones, urine complaints, diarrhea of cattle's)	Brahman, Jana, Majhat, Pichhalihar
33	<i>Betula utilis</i>	Moraceae	Bhojpatra	Tree	Bk	Used in case of ligament dislocation	Palchan
34	<i>Bupleurum falcatum</i>	Apiaceae	Nimla	Herb	Rt	Medicinal (Abdominal inflammation, fever, liver complaints); Edible	Jana
35	<i>Bupleurum aitchinsonii</i>	Apiaceae	-	Herb	Rt	Medicinal (Abdominal inflammation)	Jana
36	<i>Cannabis sativa</i>	Cannabaceae	Bhaang	Herb	Sd, Lf, Bk, Sd, Fr, Fl, St	Seed oil is extracted by expulsion and is warmed by heating the warm oil is massaged on the affected parts Medicinal (Anthelmintic, appetizer, bowel complaints, cold, cough, convulsions, cramps, epilepsy, cuts,	Majhat , Jana



						dyspepsia, ear complaints, eye diseases, gonorrhoea, laxative, narcotic, nervine stimulant, piles, skin diseases, sleep pills, sores); Edible; Fibre	
37	<i>Cedrus deodara</i>	Pinaceae	Diyar	Tree	WP, St	Medicinal (Abscess, dislocation of joints, rheumatic pain, ulcer, unconsciousness, fuel and timber)	Balh, Brahman, Majhat
38	<i>Chenopodium album</i>	Chenopodiaceae	Bathu	Herb	Lf, Sd	Medicinal (To revive taste, skin diseases, urine complaints)	Jana
39	<i>Citrus limonis</i>	Rutaceae	Nimbu	Tree	Fr	Indigestion and facial purposes.	Majhat
40	<i>Coriandrum sativum</i>	Apiaceae	Dhaniya	Herb	St, Sd	Antioxidant, Lower Blood pressure and for Improving digestion	Majhat
41	<i>Curcuma longa</i>	Zingiberaceae	Haldi	Herb	Rh	To treat wound and sores in throat	Majhat, Sari
42	<i>Cyathula capitata</i>	Amaranthaceae	Litra	Herb	Lf, Sd	Medicinal (Emetic, abortifacient); Fodder	Jana
43	<i>Cyathula tomentosa</i>	Amaranthaceae	Litra	Herb	Lf, Sd	Medicinal (Emetic, snake bite); Fodder	Jana
44	<i>Dactylorhiza hatagirea</i>	Orchidaceae	Hathpanja	Herb	Rt	Stomach ache, cuts and burns	Pichhalihar, Jana
45	<i>Datura stramonium</i>	Solanaceae	Dhatura	Herb	Lf, Sd, Fl	Medicinal (Smoke of burning leaves to cure Asthma. Powdered seed are prescribed with cow's milk for fever. Flower offered to lord Shiva)	Jana
46	<i>Desmodium elegans</i>	Fabaceae	Pichhalihar	Shrub	AP, Rt, Wd	Medicinal (Epilepsy, carminative); Fodder; Fuel;	Jana

						Religious	
47	<i>Dioscorea deltoidea</i>	Dioscoreaceae	ShingliMingli	Herb	Tb	Medicinal (Oral contraceptive pills, washing clothes)	Brahman, Palchan, Jana, Nasogi
48	<i>Diplazium esculentum</i>	Athyriaceae	Lingri	Shrub	Frd	Edible; Medicinal (Constipation)	Balh, Brahman, Palchan , Halan II, Nasogi, Sari
49	<i>Euphorbia hirta</i>	Euphorbiaceae	Dhudhi	Herb	WP	Medicinal (Abscess, antidote in snake bite, bronchitis infection, burns, colic, cough, cuts, diarrhoea, dysentery, eczema, excess lactation, eye complains, pain, ring worm, scabies, scorpion bite, toothache, vomiting)	Jana
50	<i>Euphorbia pilosa</i>	Euphorbiaceae	Dudhi	Herb	WP	Medicinal (Fistular sores)	Jana
51	<i>Fagopyrum dibotrys</i>	Polygonaceae	Ban Phaphra	Herb	Lf	Medicinal (Insect bite); Edible	Jana
52	<i>Fagopyrum esculentum</i>	Polygonaceae	Phaphra	Herb	Rt, Fr, Lf	Medicinal (Lung disorders, rheumatism, typhoid, urine complaints)	Jana
53	<i>Ficus palmata</i>	Moraceae	Fagra	Tree	Lf, Fr,	Fodder; Medicinal (Digestive disorder, Burns, cuts, rheumatic)	Balh, Nasogi, Brahman , , Hallan II, Jana
54	<i>Gnaphalium affine</i>	Asteraceae	Dhoop	Herb	WP	Medicinal (Antiperiodic, antitussive, expectorant, febrifuge, influenza, sore throat, productive coughing, rheumatoid arthralgia, traumatic injuries, leucorrhoea, seminal emissions, hives, weeping pruritis of the skin)	Jana
55	<i>Grewia</i>	Trilliaceae	Beul	Tree	Lf, St, Fr,	Medicinal ( Skin diseases,	Jana

	<i>opposifolia</i>				Bk	fever, veterinary diseases); Fibre; Misc. (Detergent)	
56	<i>Hedychium spicatum</i>	Zingiberaceae	Ban haldi	Herb	Rh, Lf	Medicinal (Asthma, blood purifier, bronchitis, nausea); Fodder; Misc. (Mats)	Jana
57	<i>Heracleum candicans</i>	Apiaceae	Padiyala	Herb	Lf, Rt	Medicinal (Leucoderma, menstrual complaints); Edible	Jana
58	<i>Indigofera heterantha</i>	Fabaceae	Kali Pichhalihar	Shrub	Lf, St, Br	Medicinal (Diarrhoea, dysentery, cough, wound) Dye	Balh, , Brahman, Hallan II
59	<i>Juglans regia</i>	Juglandaceae	Akhrot	Herb	Br, Lf, Fr	Medicinal, (It is used to stop bleeding in minor cuts)	Balh, Brahman, Palchan, Nasogi , Hallan II, Sari
60	<i>Juniperus communis</i>	Cupressaceae	Bethar	Tree	Lf, Tw	Medicinal (Leucorrhoea, dysmenorrhoea, skin ailments);	Jana
61	<i>Juniperus indica</i>	Cupressaceae	Guggul	Shrub	Lf, Rt	Religious aromatic purposes, insect repellent	Pichhalihar
62	<i>Melia azedarach</i>	Meliaceae	Darek	Tree	Lf, Fr, Sd	Medicinal (Skin diseases, rheumatism, antiseptic, wormicide, abortifacient);	Jana
63	<i>Mentha longifolia</i>	Lamiaceae	Pudina	Herb	leaf	Medicinal (Digestion)	Brahman, Jana
64	<i>Mentha sp.</i>	Lamiaceae	Kusma	Shrub	Lf, St	Medicinal (Antiseptic, bronchitis, colic, diarrhea)	Balh, Nasogi, Pichhalihar, Majhat, Palchan
65	<i>Mentha sylvestris</i>	Lamiaceae	Poodina	Herb	Lf	Used in kitchen, help in smoother digestion, anti-inflammatory properties may help cure the headache, having antibacterial properties	Hallan II, Brahman
66	<i>Morchella esculenta</i>	Morchellaceae	Guchhi	Fern	Ap	Medicinal (fever), Edible	Brahman, Majhat , Hallan II , Palchan , Sari, Nasogi
67	<i>Murraya koenigii</i>	Rutaceae	Karripata	Tree	Lf, Sd	Dysentery, constipation, diarrhoea. Good for eyesight.	Majhat
68	<i>Ocimum</i>	Lamiaceae	Bhabhri	Herb	Lf	Soothing effect and gastric	Sari

	<i>basilicum</i>					problems	
69	<i>Ocimum sanctum</i>	Lamiaceae	Tulsi	Fern	Lf, Sd	Medicinal common cold ,gastric problems and antibacterial properties	Balh, Majhat, Nasogi
70	<i>Ocimum tenuiflorum</i>	Lamiaceae	Bhabhri	Shrub	Lf	Medicinal (It is used in gastrointestinal problems and is applied with cow urine in various skin disorders)	Balh, ,
71	<i>Origanum vulgare</i>	Lamiaceae	Ban tulsi	Shrub	Lf	Medicinal (Skin diseases and gastric disorders)and religious purpose.	Balh, Brahman, , Hallan II , Jana
72	<i>Oxalis acetosella</i>	Oxalidaceae	Malori	Herb	Lf	Medicinal (Fresh or dried leaves are anodyne, antiscorbutic, astringent, diuretic, emmenagogue, expectorant, febrifuge, irritant, stomachic, decoction is used in the treatment	Balh, , Brahman , , Hallan II
73	<i>Oxalis corniculata</i>	Oxalidaceae	Malori	Herb	Ap	Medicinal (fresh or dried leaves are anodyne, antiscorbutic, astringent, diuretic, expectorant, febrifuge, irritant, stomachic)	Majhat , Hallan II, Jana, Pichhalihar
74	<i>Paris polyphylla</i>	Liliaceae	Satuawa	Herb	WP	Medicinal (Febrifuge, analgesic, antiphlogistic, antispasmodic, antitussive, depurative, narcotic, snake bite, ulcer, antibacterial)	Jana
75	<i>Phytolacca acinosa</i>	Phytolaccaceae	Jharka	Herb	Rt, Lf	Medicinal (Stomach cramps, dysentery, wounds, cattle pneumonia, local beverages)	Brahman, Jana, Pichhalihar, Hallan II
76	<i>Picrorhiza kurroa</i>	Plantaginaceae	Karu	Herb	Rt	Digestion, fever	Pichhalihar, Jana, Palchan, Nasogi



77	<i>Pinus wallichana</i>	Pinaceae	Kail	Shrub	WP, St, Sd, Lf	Medicinal (Blood purifier, jaundice, skin eruption, astringent, dog bite, wounds, kidney disease, postnatal tonic, throat pain, tonic)	Balh, Brahman, Hallan II
78	<i>Pistacia integerrima</i>	Anacardiaceae	Kakar Singi	Tree	Fr	Medicinal (asthama, fever, vomiting, diarrhea) Fuel, fodder, edible, making tools, dye.	Balh, Nasogi, Brahman, Palchan, Hallan II, Jana, Sari
79	<i>Plantago lanceolata</i>	Plantaginaceae	Nianu	Herb	Rt, Lf	Ulcers	Majhat
80	<i>Podophyllum hexandrum</i>	Podophyllaceae	-	Herb	Fr, Rt, Sd	Medicinal (Cancer, cough, cuts, wounds, fever, gastric ulcers, hepatic diseases, purgative, skin diseases); Edible	Jana, Pichhalihar, Palchan, Nasogi
81	<i>Polygonatum verticillatum</i>	Liliaceae	Salam mishri	Herb	Tu	Medicinal (Aphrodisiac, appetite, nervine tonic, tonic); Edible	Jana
82	<i>Polygonatum multiflorum</i>	Liliaceae	Salam mishri	Herb	Rh	Medicinal (Urinay problems)	Jana
83	<i>Prinsepia utilis</i>	Rosaceae	Bhekal	Shrub	Fr, Lf	Medicinal (Burns, cuts, rheumatic)	Balh, Palchan, Brahman, Hallan II, Jana, Nasogi
84	<i>Prunus armeniaca</i>	Rosaceae	Share	Tree	Sd	Digestion improvement, weight loss and joint pains.	Palchan, Nasogi, Sari
85	<i>Punica granatum</i>	Lythraceae	Dadu, Anardana	Shrub	Sd	Acidity and indigestion	Sari
86	<i>Pyrus pashia</i>	Rosaceae	Shegar	Tree	Ap, Fr,	Medicinal (Fruit are used in gastrointestinal, respiratory and cardiovascular ailments Fuel and Fodder)	Balh, Nasogi, Brahman, Sari, Hallan II,
87	<i>Rabdosia</i>	Lamiaceae	Shein	Shrub	Wp	Edible, gastric	Pichhalihar

	<i>rugosa</i>						
88	<i>Rheum australe</i>	Polygonaceae	Chuchi	Herb	Rt, Lf	Internal fractures and joint pain	Pichhalihar, Jana, Palchan, Nasogi, Sari
89	<i>Rheum webbinianum</i>	Polygonaceae	Chuchi	Herb	Rt, Lf	Internal fractures and joint pain	Pichhalihar, Jana, Palchan, Nasogi, Sari
90	<i>Rhododendron arboreum</i>	Ericaceae	Brah, Brass	Tree	Fl, Lf	Medicinal (Dysentery, fever, headache, rheumatism, wounds, nose bleeding); Edible; Religious; Fuel	Jana, Majhat
91	<i>Rhus javanica</i>	Anacardiaceae	Titari	Tree	Fr	Medicinal, (Antidote, anti-venous, febrifuge, ophthalmic, candles)	Brahman, Pichhalihar, Hallan II, Jana
92	<i>Ricinus communis</i>	Euphorbiaceae	Arandi	Tree	Lf, Sd	Medicinal (abdominal disorders, arthritis, backache, muscle aches, bilharziasis, chronic backache, sciatica, chronic headache, constipation, expulsion of placenta, gallbladder pain, period pain, menstrual cramps, rheumatism, sleeplessness, and insomnia)	Hallan II, Brahman
93	<i>Rosa brunonii</i>	Ranunculaceae	Kuja	Shrub	Lf, Fr, Wd	Medicinal (Diarrhoea, ophthalmia, wounds); Edible; Fodder; Fuel	Jana
94	<i>Rosa moschata</i>	Rosaceae	Kuja	Shrub	Lf, Fl	Medicinal (Wounds, diarrhea, ophthalmia)	Balh, , Brahman , Hallan II
95	<i>Rubia cordifolia</i>	Rubiaceae	Jamithi	Herb	WP	Medicinal (blood purifier, antioxidant, diuretic, calcium channel blocker, antiplatelet, antidiabetic, antiinflammatory, antistress, immunomodulator)	Jana

96	<i>Rubia manjith</i>	Rubiaceae	Loodigha	Tree	Lf	Medicinal (It is used for cows and sheep in case of mouth ulcers and used for skin disorders in humans)	Balsh
97	<i>Rubus ellipticus</i>	Ranunculaceae	Aachhe	Shrub	Fr, Rt	Medicinal (Dysentery, malaria, stomachache, worms); Edible	Jana
98	<i>Rubus pedunculatus</i>	Rosaceae	Aakhe	Shrub	Sd	Laxative, constipation.	Majhat
99	<i>Rumex nepalensis</i>	Polygonaceae	Malori	Herb	Lf, Fl	Head and body ache, skin care	Pichhalihar, Jana
100	<i>Salvia lanata</i>	Lamiaceae	Gawandru	Herb	Rt, Lf, Fl	Medicinal (Astringent, colic, cold, cough)	Jana
101	<i>Salvia splendens</i>	Lamiaceae	Ram tulsi	Tree	Lf	Medicinal (Frost bite, rheumatism, sores of toes, toothache, fuel, fodder tool making, dye)	Balsh
102	<i>Saussurea costus</i>	Compositae	Kunth	Herb	Rt	Asthma, ulcer	Jana
103	<i>Sedum spp</i>	Crassulaceae	Chineri	Herb	Lf	diphtheria, ringworm,	Pichhalihar
104	<i>Selinum tenuifolium</i>	Apiaceae	Matoshal	Herb	WP	Medicinal (Incense, insecticidal, nervine tonic, sedative); Religious	Jana, Pichhalihar
105	<i>Selinum vegenatum</i>	Apiaceae	Matoila	Herb	Rt	Nerve tonic, headache	Pichhalihar
106	<i>Solanum indicum</i>	Solanaceae	-	Herb	Fr	Medicinal (Asthma, fever, colic)	Jana
107	<i>Solanum nigrum</i>	Solanaceae	Makoi	Herb	Fr, Lf, Fl, Sd	Medicinal (Antidote, boils, cough, dysentery, ear complaints, fever, eye complaints, skin diseases, urinary complaints)	Jana
108	<i>Tagetes minuta</i>	Asteraceae	-	Herb	WP	Misc. (Aromatic oil)	Jana

109	<i>Tanacetum dolichophyllum</i>	Asteraceae	Guggulu	Herb	Lf	Medicinal (Fever); Incense	Jana
110	<i>Taraxacum officinalis</i>	Asteraceae	Kanphul	Herb	WP	Medicinal (Blisters, blood purifier, bowel complaints, diuretic, dysentery, gastric, ulcer, headache, kidney diseases, liver complaints, tonic, wounds); Edible	Jana
111	<i>Taxus contorta</i>	Taxaceae	Rakhal	Tree	Lf, Br	Medicinal (leaf and bark is used in tea and fuel)	Brahman, Jana, Palchan, Pichhalihar, Nasogi, Sari
112	<i>Thymus linearis</i>	Lamiaceae	Jangli Ajwain	Herb	Wp	Medicinal (Antifungal, antibacterial, pain reliever during childbirth to mother, whooping cough, epilepsy, skin eruption, reduce excessive bile secretion, juice, alopecia, spasmodic pains, stomach complaint, cold, toothache, kill hookworms, liver compliant, heating effect)	Brahman, Hallan II, Jana, Pichhalihar, Palchan, Nasogi, Sari
113	<i>Tinospora cordifolia</i>	Menispermaceae	Giloy	Climber	Wp	Urinary tract infections, infertility, liver diseases.	Balh
114	<i>Toona ciliata</i>	Meliaceae	Daral	Tree	Bk, Fr, Lf	Medicinal (Antiseptic, dysentery, bronchitis, fever, gastric troubles); Fodder	Jana
115	<i>Trillidium govanianum</i>	Trilliaceae	Naagchatri	Herb	Tu	Medicinal (Sex related complaints, dysentery, aphrodisiac )	Jana, Pichhalihar, Palchan, Nasogi, Sari
116	<i>Tussilago farfara</i>	Asteraceae	Shothzladi	Herb	Lf, Rt	Digestion, cough, cold and fever.	Majhat
117	<i>Ulmus wallichiana</i>	Trilliaceae	Mahun	Tree	Lf, Wd, Bk	Medicinal (Bone fracture, bone dislocation); Fodder; Fuel;	Jana



						Timber	
118	<i>Urtica dioica</i>	Urticaceae	Ahan	Herb	Lf	Medicinal (Blood purifier, jaundice, skin eruption, astringent, dog bite, wounds, kidney disease, postnatal tonic, throat pain, tonic)	Balh, Nasogi, Brahman, Sari, Jana, Palchan
119	<i>Valeriana hardwickii</i>	Valerianaceae	Nihani	Herb	Wp	Medicinal (Skin diseases)	Brahman, , Hallan II , Jana
120	<i>Valeriana jatamansi</i>	Valerianaceae	Nihanu	Herb	WP	Medicinal (Antidote to sting of insects, Hysteria, Neurosis, Skin diseases); Religious	Brahman, , Hallan II , Jana, Majhat
121	<i>Verbascum sp.</i>	Scrophulariaceae	Budhhiralou gad	Shrub	Lf,	Medicinal (Skin disease, anthelmintic, rheumatism, ulcer, fuel and timber)	Balh
122	<i>Verbascum thapsus</i>	Scrophulariaceae	Janglitambakhu	Herb	Sd	Medicinal (Asthma, cough, inflammation, leucoderma, veterinary diseases)	Jana, Majhat
123	<i>Viburnum cotinifolium</i>	Caprifoliaceae	Tallahna	Shrub	Lf, Fr, Bk	Medicinal (Menorrhoea); Edible; Fodder; Fibre	Jana
124	<i>Viola serpens</i>	Violaceae	Banafsha	Herb	Lf, Fl	Medicinal (Asthma, bronchitis, cold, cough, wounds)	Jana
125	<i>Viola canescens</i>	Violaceae	Banaksha	Shrub	Lf, Fl	Medicinal (Asthma, Bronchitis, Cold, Cough, Eye diseases)	Balh, , Brahman, Hallan II, Jana
126	<i>Viola odorata</i>	Violaceae	Banaksha	Herb	Fl	For cough and cold	Pichhalihar, Jana, Palchan, Nasogi, Sari
127	<i>Viola pilosa</i>	Violaceae	Banaksha	Herb	Lf, Fl	Medicinal (asthma, bronchitis, cold, cough, eye diseases)	, Hallan II
128	<i>Withania somnifera</i>	Solanaceae	Ashwagandha	Shrub	Rt	Medicinal (Asthma, cough and respiratory disorders)	Balh, Majhat , Brahman, Hallan II ,
129	<i>Zanthoxylum armatum</i>	Rutaceae	Tirmira/timru	Shrub	Fr, Sd	Medicinal (Cough, cholera, fever, eczema, itching,	Jana, Majhat, Sari

						leucoderma, piles, rheumatism, tonic, tooth complaints); Edible; Fuel	
130	<i>Zehrenia sp.</i>	Cucurbitaceae	Vankokru	Climber	Rt	Snake bite	Majhat

Abbreviations: Wp- whole plant, Lf- Leaf, Tw- Twig, Fl- Flower, Bk- Bark, Sd- Seed, R-Root, Tu- Tuber, Bk- Bark, Wd- wood,

## Destilas of respondent interviewed to assess their knowledge about medicinal and aromatic plants in Kullu Cluster

## Balh VFDs

S.No.	Name of respondents	Father's Name	Gender	Age	Education	Occupation	Category (Gen/SC/ST/OBC)	Traditional Vaidays (Yes/No)	Medicinal Cultivator/Collector
1.	Mr. Devi Singh	Mr. Dehar Singh	Male	40 Years	matric	Agriculture	Gen	No	Collector
2.	Mr. Balwant Singh	Mr. Thakur Chand	Male	44 Years	matric	Agriculture	Gen	No	Collector
3.	Mrs. Shanta Devi	Mr. Maheshu	Female	29 Years	matric	Agriculture	Gen	No	Collector
4.	Mrs. Dharam Dasi	Mr. Krishan Chand	Female	37 Years	matric	Agriculture	Gen	No	Collector
5.	Mr. Bhag Chand	Mr. khekhu	Male	54 Years	Elementary	Agriculture	Gen	No	Collector
6.		Mr.		25					

	Mr. Bhoj Raj	Chande Ram	Male	Years	Graduate	Agriculture	Gen	No	Collector
7.	Mr. Room Singh	Mr. Tek Singh	Male	22 Years	+2	Agriculture	Gen	No	Collector
8.	Mrs. Kiran Bala	Mr. Heera Singh	Male	40 Years	matric	Agriculture	Gen	No	Collector
9.	Mr. Kushal Thakur	Mr. Hottam Singh	Male	28 Years	+2	Agriculture	Gen	No	Collector
10.	Mr. Ritik	Mr. Bhimi Ram	Male	18 Years	matric	Agriculture	Gen	No	Collector
11.	Mr. Sanjeev Thakur	Mr. Ranjeet Singh	Male	24 Years	B.Tech.	Agriculture	Gen	No	Collector
12.	Mrs. Pushpa	Mr. Talve Ram	Female	36 Years	Graduate	Agriculture	Gen	No	Collector

**Bari VFDs**

S.No.	Name of respondents	Gender	Age	Occupation	Traditional Vaidyas (Yes/No)
1	Bekham Ram	M	72	Farmer, Orchardist	Yes
2	Tharvan Lal	M	59	Farmer, Orchardist	No
3	Neel Chand Thakur	M	48	Farmer, Orchardist	No
4	Bahadur Singh	M	51	Farmer, Orchardist	No
5	Raj Kumar	M	42	Farmer, Orchardist	No
6	Beer Chand	M	64	Farmer, Orchardist	No
7	Lot Ram	M	70	Farmer, Orchardist	No
8	Hari Ram	M	61	Farmer, Orchardist	No
9	Ashok Kumar	M	43	Farmer, Orchardist	No
10	Bhimi Chand	M	68	Farmer, Orchardist	No
11	Dimp Raj	M	51	Farmer, Orchardist	No
12	Geri Devi	F	70	Farmer, Orchardist	No
13	Yamuna Devi	F	58	Farmer, Orchardist	No
14	Kusum Kumari	F	45	Farmer, Orchardist	No
15	Kaushalya Devi	F	67	Farmer, Orchardist	No



### Brahman Panchayat

S.No.	Name of respondents	Father's Name	Gender	Age	Education	Occupation	Category (Gen/SC/ST/OBC)	Traditional Vaidays (Yes/No)	Medicinal Cultivator/Collector
1.	Chamari Devi	Lal Chand	Female	60 years	—	Household	General	No	Collector
2.	Aasha Devi	Amarnath	Female	42 years	Matric	Household	General	No	Collector
3.	Sundar Singh	Ramdas	Male	64 years	Graduate	Retired	General	No	Collector
4.	Vimla Devi	Tikam Ram	Female	45 years	Matric	Household	General	No	Collector
5.	Promila Devi	Belu Ram	Female	40 years	Middle	Household	General	No	Collector
6.	Vimla Devi	Purnu Ram	Female	42 years	Matric	Agriculture	General	No	Collector
7.	Rani Devi	Murat Ram	Female	37 years	Graduate	Household/Agriculture	General	No	Collector
8.	Subhash Chand	Tikam Ram	Male	53 years	Matric	Agriculture, Ex-servicemen	General	No	Collector
9.	Padma Devi	Khem Singh	Female	44 years	Matric	Household	General	No	Collector
10.	Om Prakash	Veer Singh	Male	31 years	+2	Agriculture	General	No	Collector
11.	Vinod Thakur	Sagar Singh	Male	31 years	+2	Agriculture	General	No	Collector

12.	Naseeb Singh	Rewat Ram	Male	48 years	+2	Agriculture	General	No	Collector
13.	Bhaghat Ram	Shetu Ram	Male	60 years	—	Agriculture	General	No	Collector
14.	Roop Lal	Mangal Ram	Male	55 years	Primary	Agriculture	General	No	Collector
15.	Mamta Thakur	Mehar Singh	Female	24 years	Graduate	Agriculture	General	No	Collector
16.	Saroj Thakur	Gyan Chand	Female	32 years	M.A. B.Ed.	Household	General	No	Collector
17.	Heera Devi	Pratap Singh	Female	29 years	Graduate	Household	General	No	Collector
18.	Damodri Devi	Bhagat Ram	Female	37 years	Matric	Household	General	No	Collector
19.	Santosh Kumari	Dugle Ram	Female	39 years	Matric	Household	General	No	Collector
20.	Aasha Devi	Heera Lal	Female	40 years	Matric	Household	General	No	Collector

### Majhat Panchayat

S.No.	Name of respondents	Father's Name	Gender	Age	Education	Occupation	Category (Gen/SC/ST/OBC)	Traditional Vaidays (Yes/No)	Medicinal Cultivator/Collector
1.	Rajender	Mahinder Singh	Male	25 years	+2	Agriculture	General	No	Collector
2.	Sushma Devi	Sher Singh	Female	50	Primary	Household	General	No	Collector

				years					
3.	Narender Thakur	Inder Singh	Male	31 years	Matric	Business	General	No	Collector
4.	Pawan Kumar	Murat Ram	Male	49 years	Matric	Agriculture	General	No	Collector
5.	Kanta Devi	Dagi Ram	Female	38 years	Middle	Household	General	No	Collector
6.	Jai Singh	Daulat Ram	Male	52 years	Primary	Agriculture	General	No	Collector
7.	Kusum Lata	Ved Ram	Female	43 years	Matric	Household	General	No	Collector
8.	Poonam	Lal Chand	Female	28 years	Graduate	Household	General	No	Collector
9.	Ghanshyam	Aami Chand	Male	49 years	Primary	Agriculture	General	No	Collector
10.	Hari Chand	Paras Ram	Male	60 years	Primary	Agriculture	General	No	Collector
11.	Ram Singh	Bala Ram	Male	61 years	Matric	Retired teacher	General	No	Collector
12.	Basanti Devi	Kalidas	Female	40 years	—	Household	General	No	Collector
13.	Shakuntla Devi	Shenu Ram	Female	56 years	Middle	Agriculture	General	No	Collector
14.	Arun Singh	Pratap Singh	Male	27 years	Graduate	—	General	No	Collector
15.	Neha Thakur	Madan Lal	Female	19 years	+2	—	General	No	Collector
16.	Parvati Devi	Ses Ram	Female	80 years	—	Household	General	No	Collector

17.	Parvati Devi	Surat	Female	45 years	Primary	Household	General	No	Collector
18.	Ses Ram	Bhikham Ram	Male	63 years	Graduate	Retired	General	No	Collector
19.	Sushila Devi	Nokh Ram Thakur	Female	60 years	Matric	Household	General	No	Collector
20.	Aasha Devi	Dev Raj	Female	27 years	Graduate	Household	General	No	Collector
21.	Lal Chand	Shyam Chand	Male	46 years	Matric	Govt. Job	General	No	Collector
22.	Dola Singh	Puran Chand	Male	42 years	Graduate	Agriculture	General	No	Collector
23.	Purakhi Devi	Aalam Chand	Female	60 years	—	Household	General	No	Collector
24.	Mohan Singh	Nanak Chand	Male	26 years	Graduate	Business	General	No	Collector
25.	Hukum Ram	Aalam Chand	Male	50 years	Graduate	Agriculture	General	No	Collector
26.	Mohar Singh	Mani Ram	Male	40 years	Matric	Agriculture	General	No	Collector
27.	Purakhi Devi	Hari Ram	Female	40 years	—	Household	General	No	Collector
28.	Kulwant Singh	Aalam Chand	Male	30 years	Graduate	Private job	General	No	Collector

**Jana Panchayat**

S.No.	Name of respondents	Gender	Age	Education	Occupation	Traditional Vaidyas (Yes/No)	Medicinal Cultivator/Collector
1	Pyare Chand	M	42		Farmer, Orchardist	No	
2	Suraj Singh	M	50		Farmer, Orchardist	No	
3	Alam Chand	M	62	Metric	Farmer, Orchardist	No	
4	Ganga Ram	M	37		Farmer, Orchardist	No	
5	Dabe Ram	M	41	Intermediate	Farmer, Orchardist	No	Collector, Cultivator
6	Dhot Ram	M	35		Farmer, Orchardist	No	
7	Revati Devi	F	58		Farmer, Orchardist	No	
8	Bal Krishna	M	49		Farmer, Orchardist	No	



					st		
9	Dev Raj	M	52		Farmer, Orchardist	No	
10	Malti Devi	F	76		Farmer, Orchardist	No	
11	Eshru Ram	M	40		Farmer, Orchardist	No	
12	Bindru	M	43	Intermedi ate	Farmer, Orchardist	No	
13	Rajesh Singh	M	50	Intermedi ate	Farmer, Orchardist	No	
14	Chandra Kiran	M	47	Intermedi ate	Farmer, Orchardist	No	

### Nasogi Panchayat

S.No.	Name of respondents	Father's Name	Gender	Age	Education	Occupation	Category (Gen/SC/ST/OBC)	Traditional Vaidays (Yes/No)	Medicinal Cultivator/Collector
1.	Mr. Panna Lal	Mr. Bala Ram	Male	50 Years	Primary	Agriculture	Gen	No	Collector
2.		Mr. Sunder		41					

	Mr.. Prakash Chand	Singh	Male	Years	+2	Agriculture	Gen	No	Collector
3.	Mr. Jagat Singh	Mr. Joginder Singh	Male	41 Years	B.Com	Pvt. Job	Gen	No	Collector
4.	Mrs. Kaushalya	Mr. Rohlu Ram	Female	62 Years	—	Household	Gen	No	Collector
5.	Mr. Jagdish	Mr. Puran Chand	Male	55 Years	8th	Agriculture	Gen	No	Collector
6.	Mr. Kailash Thakur	Mr. Hukam Ram	Male	29 Years	Graduated	Agriculture	Gen	No	Collector
7.	Mr. Dola Ram	Mr. Parmanand	Male	52 Years	8th	Agriculture	Gen	No	Collector
8.	Mr. Rajat Thakur	Mr. Kailash Singh	Male	27 Years	B.A.(HONS)	Student	Gen	No	Collector
9.	Mr. Vinay Thakur	Mr. Yuvraj	Male	37 Years	B.A.	Agriculture	Gen	No	Collector
10.				45					

	Mr. Subhash Thakur	Mr. Het Ram	Male	Years	+2	Own Business	Gen	No	Collector
11.	Mr. Vinay	Mr. Sunder Singh	Male	41 Years	+2	Agriculture	Gen	No	Collector
12.	Mr. Bala Ram	Mr. Ram Das	Male	61 Years	9th	Retd. Govt. Employee	Gen	No	Collector
13.	Mr. Janak Raj	Mr. Ramu Ram	Male	52 Years	10th	Agriculture	Gen	No	Collector

### Pichhalihaar Panchayat

S. No.	Name of respondents	Gender	Age	Education	Occupation	Traditional Vaidyas (Yes/No)	Medicinal Cultivator/Collector
1	Pyare Chand	M	30	Primary	Farmer	No	No
2	Bhag Chand	M	30	Primary	Farmer	No	No
3	Ram Chand	M	40	Primary	Farmer	No	No
4	Halya Devi	F	31	Metric	Farmer	No	No
5	Preetu Devi	F	60	-	Farmer	No	No
6	Roop Das	M	70	Metric	Farmer	Yes	Collector

7	Khud Ram	M	47	Intermediate	Farmer	No	Collector
8	Joginder	M	38	Primary	Farmer	No	No
9	Saudagar	M	30	Graduate	Farmer	No	No
10	Amar Chand	M		Metric	Farmer	No	No
11	Mohar Singh	M	27	M Phil	Researcher	No	No
12	Shiv Ram	M	50	Primary	Farmer	No	Collector
13	Ramesh Chand	M	27	Intermediate	Farmer	No	No

### Palchan Panchayat

S.No.	Name of respondents	Father's Name	Gender	Age	Education	Occupation	Category (Gen/SC/ST/OBC)	Traditional Vaidays (Yes/No)	Medicinal Cultivator/Collector
1.	Mr. Uday Ram	Mr. Khoob Ram	Male	49 Years	10th	Agriculture	Gen	No	Collector
2.	Mr.. Mehar Chand	Mr. Roldu Ram	Male	62 Years	-	Agriculture	Gen	No	Collector
3.	Mr. Dev Raj	Mr. Gupt Ram	Male	36 Years	10th	Agriculture	Gen	No	Collector

4.	Mr.Panna Lal	Mr. Punne Ram	Male	48Years	8th	Agriculture	Gen	No	Collector
5.	Mr. Roop Chand	Mr. Jawalu ram	Male	32 Years	12th	Agriculture	Gen	No	Collector
6.	Mr. Tirath Ram	Mr. Chandu Ram	Male	36 Years	Graduated	Agriculture	Gen	No	Collector/Cultivator
7.	Mr. Jawalu Ram	Mr. Moti Ram	Male	60 Years	-	Agriculture	Gen	No	Collector
8.	Mr. Duni Chand	Mr. Panna lal	Male	31 Years	B.A.	Agriculture	Gen	No	Collector
9.	Mr. Karam Chand	Mr. Gupt Ram	Male	42 Years	10th	Agriculture	Gen	No	Collector
10.	Mr. Puran Chand	Mr. Yuvraj	Male	28 Years	+2	Agriculture	Gen	No	Collector



### Sari Panchayat

S.No.	Name of respondents	Father's Name	Gender	Age	Education	Occupation	Category (Gen/SC/ST/OBC)	Traditional Vaidays (Yes/No)	Medicinal Cultivator/Collector
1	Tedi Singh	Mr. Paras Ram	Male	84 years	-	Former agriculturist Senior citizen	Gen	No	Collector
2	Dasmu Devi	Mr. Mansa Ram	Female	78 years	-	Housewife	Gen	No	Collector
3	Chandermani	Mr. Shampy	Female	80 years	-	Housewife	Gen	No	Collector
4	Sita Devi	Mr. Gyan Chand	Female	27 years	8th	Housewife	Gen	No	Collector
5	Tumi Devi	Mr. Mani Ram	Female	76 years	-	Housewife	Gen	No	Collector
6	Kamla Devi	Mr. Baghi Ram	Female	55 years	-	Housewife	Gen	No	Collector
7	Dine Ram	Mr. Saligram	Male	63 years	8th	Redt. Govt. employ	Gen	No	Collector
8	Ratan Chand	Mr. Khubi Ram	Male	76 years	-	Agriculture	Gen	No	Collector

9	Begmu Devi	Mr. Fagnu	Female	53 years	-	Housewife	Gen	No	Collector
10	Silvantu Devi	Mr. Ram Singh	Female	60 years	-	Housewife	Gen	No	Collector
11	Gole Ram	Mr. Norbu Ram	Male	52 years	5th	Agriculture	Gen	No	Collector
12	Kamla Devi	Mr. Balak Ram	Female	57 years	-	Housewife	Gen	No	Collector
13	Tilaku Devi	Mr. Kartu	Female	70 years	-	Housewife	Gen	No	Collector
14	Tek Chand	Mr. Kishan	Male	48 years	10th	Home guard	Gen	No	Collector
15	Sunita Devi	Mr. Thakur Chand	Female	28 years	8th	Housewife	Gen	No	Collector
16	Charan Das	Mr. Kishan Chand	Male	60 years	5th	Agriculture	Gen	No	Collector
17	Veer Dasi	Mr. Dole Ram	Female	57 years	-	Housewife	Gen	No	Collector
18	Shaddi Devi	Mr. Dolu Ram	Female	70 years	-	Housewife	Gen	No	Collector
19	Raudi Devi	Mr. Nathu	Female	70 years	-	Housewife	Gen	No	Collector
20	Meena Devi	Mr. Sher	Female	31	8th	Housewife	Gen	No	Collector

		Singh		years					
21	Omi Devi	Mr. Shiv Ram	Female	30 years	5th	Housewife	Gen	No	Collector
22	Suma Devi	Mr. Suwaru Ram	Female	23 years	+2	Housewife	Gen	No	Collector
23	Reema	Mr. Vishan Das	Female	29 years	Graduated	Housewife	Gen	No	Collector

## Medicinal plants used by the local community in Largi cluster (Talara, Kanon, Chakurtha, Thatibir VFDs/Panchayats)

S. No	Botanical name	Family	Local name	Life form	Variety	Habitat	Local Distribution	Parts used	Medicinal uses	Method of uses and dosage	Pattern of use	Community /knowledge holder
1	<i>Zingiber officinale</i>	Zingiberaceae	Adharak	H	D	Shady	1,	Rhizome	Treating nausea, easing menstrual cramps, regulating blood sugar levels, and relieving indigestion	Rhizome extract is used	Commercial/Own use	Gita devi
2	<i>Cassytha</i> sp.	Lauraceae	Akash bail	Cl	W	Moist	2	Seeds	Constipation, clear out bowel, detoxifies liver, swelling and inflammation	Seed paste and decoction	Own use	Nouk ram
3	<i>Juglans regia</i>	Juglandaceae	Akhrot	T	W, D	Shady moist	1,2,3,4	Fruit, leaf, stem, bark	Joint pain, antioxidants, cholesterol, and leaf for tooth pain	Fruit dip in water whole night next day eat with milk	Own use	Dasmi, taradevi, gitadevi,

4	<i>Ricinus communis</i>	Euphorbiaceae	Arandi	Sh	W	Shady moist	1,2,3,4	Seed	Joint pain	Oil used for joint pain	Own uses	Gita devi , chotelal
5	<i>Withania somnifera</i>	Solanaceae	Ashwgandha	T	W	Shady	4	Bark , fruit, leaf	Stress , weakness	Tablets	Own use	Beli ram , dhyan singh
6	<i>Thymus linearis</i>	Lamiaceae	Ban ajwain	H	W	Open	1,4	Leaf, fruit	Antifungal, antibacterial	Kadha	Own uses	Pune singh
7	<i>Hedychium spicatum</i>	Zingiberaceae	Ban haldi	H	W	Shady moist	1,4	Roots	Skin disease,	Powder paste	Own uses	Pune singh
8	<i>Origanum vulgare</i>	Lamiaceae	Ban tulsi	H	W	Shady moist	1,4	Leaf, flower	diarrhea	Kadha	Own uses	Pune ram
9	<i>Viola canescens</i>	Violaceae	Banafsha	H	W	Shady moist	1,2,3,4	Leaf, flower	Fever , stomach pain	Boil leaf and flower with water one fourth water use to drink	Occasionally own use	Puranchand , bhavna, gitadevi, punesingh
10	<i>Podophyllum hexandrum</i>	Berberidaceae	Bankakdi	H	W	Shady moist	1,4	Stem , leaf, roots , fruit	Anti-cancerous, Cough, Cuts, Wounds, Fever, Gasric, Ulcers, appendix	Juice and kadhu	Own uses	Chotelal



11	<i>Cannabis sativa</i>	Cannabaceae	Bhang	Sh	W	Shady moist	1,2,4	Leaf, stem	Cuts wounds stomach pain anesthesia	Paste, powder, kadha	Own uses	Dasmi ram, gitadevi, hirachand
12	<i>Princepia utilis</i>	Rosaceae	Bhekali	Sh	W	Shady dry boundary	1,2,3,4	Fruit, leaf	Constipation, burn and cuts	leaf boil with water and drink for constipation (kadha) and paste of leaf uses for cut and burn area	Occasionally own use	Dasmi, balbir
13	<i>Juniperus indica</i>	Cupressaceae	Bhithar	Sh	W	open dry	1,	Fruits, leaf, stems and barks	For curing of cough and cold, tonsillitis, headache, malarial fever, neck pain, to reduce blood pressure, chest pains, lung diseases, bronchitis, and respiratory diseases, for animals	Grounded powder of bark, stem and leaves	Own use	Pune ram

									affected by different kinds of insects, scabies and wounds			
14	<i>Selinum tenuifolium</i>	Apiaceae	Bhutkesi	H	W	open slopes	1,	Roots	Nervine, sedative	Powdered root	Own uses	Keshav , Balbir
15	<i>Boehmeria platyphylla</i>	Urticaceae	Bichugutti	Sh	W	Shady moist	1,2,4	Leaf, roots	Pus , wound ,cuts fever blood filtration	Chutney of leaf , kadha	Own uses	Ganga ram , shyamsingh , gitadevi
16	<i>Bacopa monnieri</i>	Plantaginaceae	Brahmi	H	W	Moist dry	1,2,3,4	Leaf	Nose bleeding , brain booster , immune system booster	Chew leaf , and juice form used	Own used	Dasmi ram ,
17	<i>Centratherum sp.</i>	Asteraceae	Bramhjiri	H	W		1,	Seeds	Diabetes,as nutraceuticals ,digestive, diuretic, tonic, alterative, anti-phlegmatic, anti-asthmatic,	Seed paste is used	Occasionally own use	Dasmi ram , mohansingh , diwanchand
18	<i>Rhododendron arboreum</i>	Ericaceae	Burah	Sh	W	open slopes	1,4	Leaf	cold, cough	Flower juice is used	Occasionally own use	Balbir

19	<i>Swertia chirayita</i>	Gentiana ceae	Charaeta (daniya )	H	W	Shady moist	1,	Stem, leaf	Ulcer appendix	Juice and kadhu	Own uses	Chotelal
20	<i>Angelica glauca</i>	Apiaceae	Chora	H	W	Shady moist	1,2,3,4	Roots	Medicinal (Gastric, Dysentery, Stomach related problems, Vomiting); Edible	Powder and kadha with hot water	Commercial/Own use	Chotelal, Pune singh
21	<i>Berberis aristata</i>	Berberidaceae	Daduhaldi/K shambhal	Sh	W	Dry shady	1,2,3,4	Leaf, roots	Gastric, stomach problems, Chest pain, weakness, cough	Powder of roots eat with hot water, Powder of roots with milk (1 spoon of powder)	Own use/commercial uses	Chotelal, tara, dasmi, bhumidevi, Durga, Noop ram
22	<i>Datura stramonium</i>	Solanaceae	Datura	Sh	W	Moist	2	Leaf, flower	Typhoid fever	leaf for fever, grind leave form tablets use hot water	Own uses	Noop ram, utam singh, hira singh
23	<i>Allium humile</i>	Amaryllidaceae	Dunnu	H	W	Shady moist	1,2,3,4		Stomach pain	Stem use as paste form.	Own use	Dasmi, Tara chand
24	<i>Ficus palmata</i>	Moraceae	Fagu	Sh		Open	1,4	Fruits,	constipation and diseases	Fruit and fruit sap is	Own uses	Dasmi ram

								stem	of the lungs and bladder	used		
25	<i>Morchella esculenta</i>	Morchellaceae	Gucchi	F	W	Open area	1,2,3,4	Aerial Part	Stomach pain , Collins pimples rashes, cold , fever piles	Used as paste, and for cold boil it with water and drink	Occasionally own uses	Dasmi , gita, nirmala, pune ram
26	<i>Jurinea macrocephala</i>	Asteraceae	Guggal/Dhooop	H	W	Shady moist	1,2,4	Roots, bark	Antistess , fever	Burn	Own sue /commercial use	Dasmi ram , Tara chand
27	<i>Curcuma longa</i>	Zingiberaceae	Haldi	H	W, D	Moist	1,2,3,4	Stem	Skin disease, collins , cold , cough , fever , cuts ,burn , gastric	Paste and powder used with hot water and milk	Own uses	Dasmi, bhavna,
28	<i>Dactylorhiza hatagirea</i>	Orchidaceae	Hath panja	H	W	Open	1,2,3,4	Roots	Fever ,cold stomach pain ,gastric	Roots are used as paste form for cut , tablets uses for other pains	Occasionally own uses	Keshav ram , chote ram
29	<i>Allium ursinum</i>	Amaryllidaceae	Jangli lahsun	H	W	Shady moist	1,2,3,4	Roots, leaf	Gastric , stomach pain ,	Blend piece of roots and make tablet and eat with hot water	Own use	Chotelal , tarachand

30	<i>Picrorhiza kurroa</i>	Plantaginaceae	Kaddu	H	W	Shady rocky	1,4	Roots	Cold fever	Kadha	Own uses	Pune singh
31	<i>Pistacia integerrima</i>	Anacardiaceae	Kakadshingi	T	W	Open dry boundary	1,2,3,4	Fruit	Cough , vomiting , fever , cold	Powder of kakadshingi mix with honey and eat with hot water	Own use	Gita , lata, dasmi , tara
32	<i>Aloe barbadensis</i>	Asphodelaceae	Kawarpattha	H	W	Dry boundary	1,2,3,4	Stem and jel	Skin disease , gastric ,	Gel used directly to put on face and juice for stonachptoblem	Own use	Gita devi , tara
33	<i>Aesculus indica</i>	Sapindaceae	Khanor	T	W	Shady moist	1,2,4	Leaf, stem	Weakness , joint cracks	Powder	Own use	Dasmi ram , Tula ram , gitadevi
34	<i>Artemisia indica</i>	Asteraceae	Koudi	H	W	Shady moist	1,2,4	Leaf	Gastric stomach pain	Kadha	Own uses	Chotelal
35	<i>Rosa moschata</i>	Rosaceae	Kujoo	Sh	W	Moist shady	1,4	Leaf, flower, stem	Measles chickenpox, allergy , pimple , wound	Oil and khadha	Own and commercial	Dasmi ram, Noop ram, mohar singh
36	<i>Saussurea costus</i>	Asteraceae	kuuth	H	W	Shady	1,4	Roots	Digestion, fever	oil extracted	Commercial	Pune ram

										from roots is used and dried powder		
37	<i>Oxalis acetosella</i>	Oxalidaceae	Malori	Sh	W	Shady moist	1,2,3,4	Leaf, stem	Fever, cough, cut, insect bites, skin disease, stomach pain	leaf Paste and tablets are used	Own used	Gita devi, dasmi ram, hirachand
38	<i>Thalictrum foliolosum</i>	Ranunculaceae	Mamini mamira	H	W		1,			Root powder or ash of root	Own uses	Pune singh
39	<i>Cyperus rotundus</i>	Cyperaceae	Nagarmotha	H	W	Shady moist	1,	Roots, stem	Ulcer	Kadha	Own uses	Chotelal
40	<i>Trillium govanianum</i>	Melanthiaceae	Nagchhatri	H	W	Shady moist	1,2,3,4	Roots, leaf	Diarrhea, stomach pain	(Root dry, may be boiled in milk and used for diarrhea and stomach pain)	Occasionally own uses	Keshav
41	<i>Arctium lappa</i>	Asteraceae	Nakhli kuth	H	W	Shady moist		Roots	Joints pains, stomach, gastric	kadha	Own use	Chotelal
42	<i>Ajuga bracteosa</i>	Labiatae	Neelkantha	H	W	Moist	1,2	Leaf	Sugar	Juice extract	Occasionally own	Chotelal



						shady				from leaf		
43	<i>Ajuga reptans</i>	Labiatae	Neelkanthi	H	W	Shady moist	1,2,3,4	Leaf, stem	Sugar , fever	Juice , kadha	Occasionally own use	Beli ram
44	<i>Valeriana jatamansi</i>	Valerianaceae	Nenu,Mushakbala	H	W	Shady moist	1,2,4		Body pain	Kadha	Own use	Chote ram , dasmi
45	<i>Valeriana hardwickii</i>	Caprifoliaceae	Nihani	H	W	Shady moist	1,	Whole plant	Skin disease	Kadha	Own uses	Chotelal
46	<i>Valeriana sp.</i>	Caprifoliaceae	Nihanu	H	W	Shady moist	1,4	Whole plant	Antidote to sting of insects	Kadha	Own uses	Chotelal
47	<i>Bryophyllum</i>	Crassulaceae	Pashanbhed / Patharchatta	H	W	Open dry	4	Leaf	Stones	Kadha	Own use	chotelal , dasmi , gita , tara
48	<i>Aconitum heterophyllum</i>	Ranunculaceae	Patish	H	W	Shady open	1,2,3,4	Roots	Digestive complaints, Dysentery, Gastric, Fever, Stomachache , Vomitting)	Boils with water and use as kdha form	Occasionally and own use	Keshav , balbeer,Dasmi ram , chote ram
49	<i>Galinsoga parviflora</i>	Asteraceae	Peplughans	Sh	W	Dry shady moist	1,2,3,4	Leaf	Cuts , burn	Paste used for cuts	Own use	Gita devi , Bhavna

						t						
50	<i>Mentha piperita</i>	Lamiaceae	Peppermint	H	W	Shady open	2	Leaf	Fever	Powder with hot water	Occasionally/own use	Noop ram
51	<i>Drymaria cordata</i>	Caryophyllaceae	Pithpapda	H	W	Shady moist	1,	Roots, stem, leaf	Ulcer, liver weakness	Kadha	Own uses and commercial	Chotelal
52	<i>Mentha spicata</i>	Lamiaceae	Pudina	Sh	W, D	Moist	1,2,3,4	Leaf, stem	Stomach pain chest pain, gastric	leaf chew and paste form	Own used	Tara, gita, dasmi
53	<i>Taxus baccata</i>	Taxaceae	Rakhal	H	W	Moist shady	1,2,4	Leaf	Cold fever	Kadha	Own uses and commercial	Noksingh
54	<i>Alkanna sp.</i>	Boraginaceae	Rattan jot	H	W	Shady moist	4	Stem	Hair fall,	Mix with oil and apply on hair	Own uses	Beli ram
55	<i>Polygonatum verticillatum</i>	Asparagaceae	Salam mishri	H	W	Shady moist	1,	Root	Immunity	Powder mix with water or milk	Own uses	Noksingh
56	<i>Ainsliaea aptera</i>	Asteraceae	Shatjalyadi/ Sath jalari + sthambhi + suman kae + jangali ajwain	H	W	Shady moist	1,2,3,4	Roots, stems, leaf	Stomach pain, gastric	Dried whole plant powder is used with hot water	Occasionally/own use	Keshav ram, Balbir, tarachand, Noop Ram

57	<i>Asparagus filicinus</i>	Asparagaceae	Shatjalyadi/ Sath jalari	H	W	Shady moist	1,2,3,4	Roots	Stomach pain, Antihelmintic, Rheumatism, Urinary problems, Gastric, Menstrual problems); Edible; Religious	Boil roots with 1 glass of water and remaining one fourth kadha is use to drink, Dry all the shrub after that powder is used with hot water	Occasionally /own use	Bhumi ram (panvi talara village), Noop Ram
58	<i>Dioscorea deltoidea</i>	Dioscoreaceae	Shingli mingli	H	W	Shady and dry	1,2,3,4	Roots	Lose motion	Boil with water drink just like kadha form	Own use	Chotelal , dasmi
59	<i>Carex sp.</i>	Cyperaceae	Shiunna	H	W	Moist	1,2,4	Leaf	Stomach pain gastric	Kadha	Own and commercial uses	Dasmi ram
60	<i>Poa sp.</i>	Poaceae	Shsushughans	Sh	W	Open area	1,2,4	Leaf	Wound cuts	Paste of leaf apply on wounds	Own uses	Dasmigitadevi, Noop ram
61	<i>Abies webbiana</i>	Pinaceae	Tallish patra	H	W	Shady	1,	Leaf	Respiratory diseases, anti-inflammatory and bronchodilatory	Kadha	Own uses	Noksingh
62	<i>Cinnamom</i>	Lauracea	Tezpata	T	W	Sha	1,2,3,4		Body pain,	Kadha	Own use	Dasmi ,

	<i>um tamala</i>	e				dy			cold			tarachand
63	<i>Zanthoxylum armanatum</i>	Rutaceae	Timber/Timira	H	W	Moist shady	1,2,3,4	Stem, leaf	Stomach pain	Kadha	Occasionally/own	Noksingh
64	<i>Ocimum tenuiflorum</i>	Lamiaceae	Tulsi	Sh	W	Shady	1,2,3,4	Leaf, stem	Gastric, cold cough, immune booster, fever	Chew leaf for cough	Own use	Dasmi, Gita, bhavna
65	<i>Galium</i> sp.	Rubiaceae	Umlikuri	Sh	W	Shady	1,2,3,4	Roots and leaf, stem	Collins, allergies, stomach pain, pimples	Soup use for stomach pain and paste for allergies pimples	Own use	Puranchand, tarachand

## Destilas of respondent interviewed to assess their knowledge about medicinal and aromatic plants in Largi Cluster

S.No.	Panchayat	Name of respondents	Gender	Age	Education (class attended)	Occupation
1.	Chakurtha	Puran Chand	M	46	5	Farmer/Orchardist
2.		Aatma Ram	M	40	5	Farmer/Orchardist
3.		Hukum Singh	M	40	8	Farmer/Orchardist
4.		Lal Singh	M	42	10	Farmer/Orchardist
5.		Geeta Devi	F	32	8	Farmer/Orchardist
6.		Bhavna	F	32	Graduate	Farmer/Orchardist
7.		Geeta Devi	F	32	-	Farmer/Orchardist
8.		Deewan Chand	M	60	5	Farmer/Orchardist
9.		Dhanwant Singh	M	52	5	Farmer/Orchardist
10.		Balvir	M	36	5	Farmer/Orchardist
11.		Keshav Ram	M	40	-	Farmer/Orchardist
12.		Pune Singh	M	28	10	Farmer/Orchardist
13.		Tara Chand	M	44	5	Farmer/Orchardist
14.		Shyam Singh	M	32	5	Farmer/Orchardist

15.	Vari Singh	M	46	5	Farmer/Orchardist
16.	Rajkumar	M	40	8	Farmer/Orchardist
17.	Nok Singh	M	47	-	Farmer/Orchardist
18.	Chaman Lal	M	38	5	Farmer/Orchardist
19.	Harnam Singh	M	40	12	Farmer/Orchardist
20.	Gyan Chand Shastri	M	60	M.Sc	Farmer/Orchardist
21.	Dula Singh	M	50	10	Farmer/Orchardist
22.	Gange Ram	M	35	Graduate	Farmer/Orchardist
23.	Shyam Singh	M	56	Graduate	Farmer/Orchardist
24.	Prakash Thakur	M	42	Graduate	Farmer/Orchardist
25.	Deewan Chand	M	60	Graduate	Farmer/Orchardist
26.	Tejasvi Ram	M	50	12	Farmer/Orchardist
27.	Teja Singh	M	60	12	Farmer/Orchardist
28.	Teja Singh	M	56	M.Sc	Farmer/Orchardist
29.	Lot Ram	M	48	8	Farmer/Orchardist
30.	Nok Singh	M	60	5	Farmer/Orchardist
31.	Pune Singh	M	27	10	Farmer/Orchardist
32.	Mohan Singh	M	60	5	Farmer/Orchardist
33.	Dolma	F	25	6	Farmer/Orchardist

34.		Indra Singh	M	41	6	Farmer/Orchardist
35.		Dasmi Ram	M	32	12	Farmer/Orchardist
36.		Chote Lal	M	55	5	Farmer/Orchardist
37.		Durga Devi	F	40	5	Farmer/Orchardist
38.		Geeta Devi	F	36	Graduate	Farmer/Orchardist
39.		Hukum Singh	M	65	-	Farmer/Orchardist
40.		Bhagwan Singh	M	60	5	Farmer/Orchardist
41.		Nirat Singh	M	57	5	Farmer/Orchardist
42.		Mohan Singh	M	50	12	Farmer/Orchardist
43.		Suresh Kumar	M	36	Graduate	Farmer/Orchardist
44.		Duni Chand	M	48	12	Farmer/Orchardist
45.		Lal Chand	M	50	12	Farmer/Orchardist
46.		Nirmala Devi	F	52	5	Farmer/Orchardist
47.		Thatibir	Tikam Ram	M	28	Graduate
48.	Duni Chand		M	57	5	Farmer/Orchardist
49.	Heera		M	39	5	Farmer/Orchardist
50.	Lagnu Devi		F	45	-	Farmer/Orchardist
51.	Deewan Singh		M	40	12	Farmer/Orchardist
52.	Anita		F	25	12	Farmer/Orchardist



53.		Heemar Singh	F	40	10	Farmer/Orchardist
54.		Lalit Thakur	M	-	-	Farmer/Orchardist
55.		Duni Chand	M	52	10	Farmer/Orchardist
56.		Khilu Devi	F	60	4	Farmer/Orchardist
57.		Kagdu Devi	F	50	-	Farmer/Orchardist
58.		Deewan Singh	M	40	12	Farmer/Orchardist
59.		Daulat Ram	M	52	10	Farmer/Orchardist
60.		Kamli Ram	F	60	5	Farmer/Orchardist
61.		Vidya	M	34	12	Farmer/Orchardist
62.		Chote Ram	M	35	10	Farmer/Orchardist
63.		Lalit Thakur	M	35	12	Farmer/Orchardist
64.		Palmu	F	60	-	Farmer/Orchardist
65.		Bhuri Singh	M	36	8	Farmer/Orchardist
66.		Mani Singh	F	37	5	Farmer/Orchardist
67.		Tikam Ram	M	55	8	Farmer/Orchardist
68.		Mehar Singh	M	44	10	Farmer/Orchardist
69.		Jeet Ram	M	50	8	Farmer/Orchardist
70.		Ses Ram	M	67	5	Farmer/Orchardist
71.		Duni Ram	M	57	5	Farmer/Orchardist

72.		Kamli Ram	M	60	-	Farmer/Orchardist
73.	Kanon	Jagdish Chand	M	36	12	Farmer/Orchardist
74.		Dushyant Kumat	M	24	Graduate	Farmer/Orchardist
75.		Dolma Devi	F	33	10	Farmer/Orchardist
76.		Teela Thakur	F	34	10	Farmer/Orchardist
77.		Septu Devi	F	45	-	Farmer/Orchardist
78.		Kanchan Singh	F	43	12	Farmer/Orchardist
79.		Hira Singh	M	47	10	Farmer/Orchardist
80.		Bholi Devi	F	42	8	Farmer/Orchardist
81.		Mohar Singh	M	42	12	Farmer/Orchardist
82.		Kaushalya Devi	F	38	10	Farmer/Orchardist
83.		Khem Raj	M	45	12	Farmer/Orchardist
84.		Savita Devi	F	48	5	Farmer/Orchardist
85.		Narendra	M	25	10	Farmer/Orchardist
86.		Prem Singh	M	38	10	Farmer/Orchardist
87.		Rami Devi	F	55	-	Farmer/Orchardist
88.		Shauni Devi	F	55	-	Farmer/Orchardist
89.		Meene Ram	M	58	5	Farmer/Orchardist
90.		Uttam Singh	M	48	8	Farmer/Orchardist

91.		Lagan Chand	M	36	10	Farmer/Orchardist
92.		Ishra Singh	F	44	5	Farmer/Orchardist
93.		Indra Singh	F	52	5	Farmer/Orchardist
94.		Leela Har	M	50	10	Farmer/Orchardist
95.		Chuda Mani Devi	F	-	-	Farmer/Orchardist
96.		Dhanvir	M	-	-	Farmer/Orchardist
97.		Sonu Singh	M	39	12	Farmer/Orchardist
98.		Javitri	F	39	10	Farmer/Orchardist
99.		Asha Devi	F	33	12	Farmer/Orchardist
100.		Legi Devi	F	52	5	Farmer/Orchardist
101.		Bhed Ram	M	40	5	Farmer/Orchardist
102.		Nand Lal	M	45	10	Farmer/Orchardist
103.		Talara	Saroj	F	32	M.Sc
104.	Dev Ram		M	42	-	Farmer/Orchardist
105.	Amir Chand		M	58	-	Farmer/Orchardist
106.	Dehar Singh		M	41	-	Farmer/Orchardist
107.	Lata Singh		F	35	-	Farmer/Orchardist
108.	Khem Raj		M	52	-	Farmer/Orchardist
109.	Durga Singh		M	46	-	Farmer/Orchardist

110.		Veli Ram	M	49	-	Farmer/Orchardist
111.		Om Prakash	M	42	-	Farmer/Orchardist
112.		Bheemi Ram	M	37	-	Farmer/Orchardist
113.		Jagdish	M	42	-	Farmer/Orchardist
114.		Ram Lal	M	51	-	Farmer/Orchardist
115.		Lal Singh	M	27	-	Farmer/Orchardist
116.		Pawan Kumar	M	27	-	Farmer/Orchardist
117.		Narayan	M	41	-	Farmer/Orchardist
118.		Uday Ram	M	38	-	Farmer/Orchardist
119.		Mohar Singh	M	-	-	Farmer/Orchardist
120.		Lakshman	M	52	12	Farmer/Orchardist
121.		Nirmala Devi	F	60	10	Farmer/Orchardist
122.		Jogindar Singh	M	54	5	Farmer/Orchardist
123.		Jayvanti	F	28	12	Farmer/Orchardist
124.		Vipi Sharma	M	40	Graduate	Farmer/Orchardist
125.		Brij Mohan	M	52	-	Farmer/Orchardist
126.		Madan Lal	M	60	-	Farmer/Orchardist
127.		Shiv Ram Sharma	M	68	Graduate	Farmer/Orchardist
128.		Sanam Krishna	F	21	12	Farmer/Orchardist

129.		Rmaesh Sharma	M	47	10	Farmer/Orchardist
130.		Anupurna	F	30	Master's	Farmer/Orchardist
131.		Bhumi Ram	M	55	6	Farmer/Orchardist
132.		Baldev Gautam	M	35	12	Farmer/Orchardist

### Information about VFDs members of Largi Cluster

Panchayats	Pradhan		Forest Guard		B.O	
	Name	Contact No.	Name	Contact No.	Name	Contact No.
Chakurtha	Manohar Lal	7018837019	Daleep Singh	9817010640	Harnam Singh	9418954150
Thatibir	-	-	-	-	-	-
Talara	Durga Devi	8894082665	Prem	9625728930	Mohar Singh	9816234638
Kanon	Pritam Singh	9805755955	Kuldeep Singh	9857300820	Mohar Singh	9816234638

### Details of BMC members of Largi Cluster

Panchayats	Chairman		Secretary		BMC Members	
	Name	Contact No.	Name	Contact No.	Name	Contact No.
Chakurtha	Roshan	9816607110	Raghubir Singh	9418604205		7018582165
					1. Hukmi Ram	8627071607
					2. Davidra Devi	8626937734
					3. Urmila Devi	

Thatibir	Thakri Devi	819044984	Dinesh Kumar	8894072111	1. Prem Singh	8278799921
					2. Noopi Devi	8219969101
					3. Leela Devi	8626830957
					4. Virbhadra Singh	9805917065
					5. Sheela Devi	8894279691
Talara	Sunita Devi	9805563539	Thakur Das	9516247346	1. Hem Lata	9816872809
					2. Omi Devi	
					3. Rakesh Kumar	7876460472
					4. Dehar Singh	8894386128
Kanon	Kirna Devi	9805710528	Bhagat Ram	9816525697	1. Bimla Devi	981729664
					2. Nirmala Devi	9882033200
					3. Mor Dyanu	9805450517
					4. Khub Ram	8894184135
					5. Jagat Ram	8091221834

## Annexure-VI

## Medicinal plants used by the local community in Jari Cluster, District -Kullu, HP

S.No	Botanical Name	Family	Local Name	Life Form	Part used	Medicinal Uses	Name of Panchayat/VF Ds
1	<i>Withaniasominifera</i>	Solanaceae	Ashwagandha	Shrub	Rt	Medicinal (Asthma, cough and respiratory disorders)	Danogi, Khokhan 2
2	<i>Pyrus pashia</i>	Rosaceae	Shegar	Tree	Ap,Fr,	Medicinal (Fruit are used in gastrointestinal, respiratory and cardiovascular ailments Fuel and Fodder)	Bashona, Danogi, Chhman
3	<i>Zanthoxylum sp.</i>	Rutaceae	Tirmira	Shrub	Fr, Br	Medicinal (Branches are used to brush the teeth and fruits are used in tooth disorders)	Danogi, Khokhan 2
4	<i>Berberis aristata</i>	Berberidaceae	Kashambal	Shrub	Rt, Fr, Wd	Medicinal (Roots are boiled and water is consumed to lower the blood pressure), (Snake bite, boils, eye complaints)	Bashona, Danogi, Chhman, Kapilmuni, Khokhan 2
5	<i>Ficus palmata</i>	Moraceae	Fagra	Tree	Lf, Fr,	Fodder; Medicinal (Digestive disorder, Burns, cuts, rheumatic)	Bashona, Danogi
6	<i>Indigofera heterantha</i>	Fabaceae	Kali Kathi	Shrub	Lf, St, Br	Medicinal (Diarrhoea, dysentery, cough, wound) Dye	Danogi



7	<i>Oxalis acetosella</i>	Oxalidaceae	Malori	Herb	Lf	Medicinal (Fresh or dried leaves are anodyne, antiscorbutic, astringent, diuretic, emmenagogue, expectorant, febrifuge, irritant, stomachic, decoction is used in the treatment)	Bashona, Danogi,
8	<i>Pistacia integerrima</i>	Anacardiaceae	KakarSingi	Tree	Fr	Medicinal (asthama, fever, vomiting, diarrhea) Fuel, fodder, edible, making tools, dye.	Bashona, Danogi
9	<i>Rosa moschata</i>	Rosaceae	Kuja	Shrub	Lf,Fl	Medicinal (Wounds, diarrhea, ophthalmia)	Bashona, Danogi
10	<i>Diplazium esculentum</i>	Athyriaceae	Lingri	Shrub	Frd	Edible; Medicinal (Constipation)	Danogi
11	<i>Viola canescens</i>	Violaceae	Banaksha	Shrub	Lf, Fl	Medicinal (Asthma, Bronchitis, Cold, Cough, Eye diseases)	Bashona
12	<i>Aloe barbadensis</i>	Asphodelaceae	Aloe vera	Herb	Lf	Medicinal (Aloe vera gel is used as skin moisturizer and is good for hair and skin health)	Bashona, Khokhan 2
13	<i>Ocimum tenuiflorum</i>	Lamiaceae	Bhabhri	Shrub	Lf	Medicinal (It is used in gastrointestinal problems and is applied with cow urine in various skin disorders)	Chhman, Kapil muni
14	<i>Pinus wallichana</i>	Pinaceae	Kail	Shrub	WP, St, Sd, Lf	Medicinal (Blood purifier, jaundice, skin eruption, astringent, dog bite, wounds, kidney disease, postnatal tonic, throat pain, tonic)	Danogi
15	<i>Cedrus deodara</i>	Pinaceae	Diyar	Tree	WP, St	Medicinal (Abscess, dislocation of joints, rheumatic pain, ulcer, unconsciousness, fuel and timber)	Danogi

16	<i>Juglans regia</i>	Juglandaceae	Akhrot	Herb	Br, Lf, Fr	Medicinal, (It is used to stop bleeding in minor cuts)	Bashona, Danogi
17	<i>Origanum vulgare</i>	Lamiaceae	Ban tulsi	Shrub	Lf	Medicinal (Skin diseases and gastric disorders)and religious purpose.	Danogi
18	<i>Mentha sp.</i>	Lamiaceae	Poodina	Shrub	Lf, St	Medicinal (Antiseptic, bronchitis, colic, diarrhea)	Khokhan 2, Upper Jia
19	<i>Artemesiacapillaris</i>	Asteraceae	Jhaoo	Herb	Lf	Medicinal (Leaf juice is used as an ear drop)	Bashona
20	<i>Sapindusmukorossi</i>	Sapindaceae	Reetha/Doda	Tree	Fr	Medicinal (fruit), Hair shampoo, hair shiner and softer. Antibacterial and anti-fungal in nature. Used for washing purpose and prevents the hair loss	Bashona
21	<i>Lactucaserriola</i>	Asteraceae	Doodhli/kahu	Herb	Lf	Medicinal (leaf) for cardiac paralysis, cough, and swell on liver	Bashona
22	<i>Cannabis sativa</i>	Cannabaceae	Bhaang	Herb	Sd, Lf, Bk, Sd, Fr, Fl, St	Seed oil is extracted by expulsion and is warmed by heating the warm oil is massaged on the affected parts Medicinal (Anthelmentic, appetizer, bowel complaints, cold, cough, convulsions, cramps, epilepsy, cuts, dyspepsia, ear complaints, eye diseases, gonohorrea, laxative, narcotic, nervine stimulant, piles, skin diseases, sleep pills, sores); Edible; Fibre	Bashona
23	<i>Prinsepia utilis</i>	Rosaceae	Bhekal	Shrub	Fr, Lf	Medicinal (Burns, cuts, rheumatic)	Bashona, Danogi, Chmman, Kapil muni

24	<i>Cuscutareflexa</i>	Convolvulaceae	Amarbel	Herb	St	Medicinal (stem) good to relieve the swelling ,massage with mustard oil and boiled the powder is good for internal injuries	Bashona
25	<i>Ocimum sanctum</i>	Lamiaceae	Tulsi	Fern	Lf, Sd	Medicinal common cold ,gastric problems and antibacterial properties	Bashona, Khokhan 2, Upper Jia
26	<i>Datura stramonium</i>	Solanaceae	Dhatura	Herb	Lf, Sd, Fl	Medicinal (Smoke of burning leaves to cure Asthma. Powdered seed are prescribed with cow's milk for fever. Flower offered to lord Shiva	Bashona, Jana
27	<i>Narcissus tazetta</i>	Amaryllidaceae	Bodi	Herb	Bulb	Medicinal (Bulb used for swelling and urinary problems)	Bashona
28	<i>Mentha arvensis</i>	Lamiaceae	Poodina	Herb	Lf	Used in kitchen, help in smoother digestion, anti-inflammatory properties may help cure the headache, having antibacterial properties	Bashona, Chhman, Kapil muni
29	<i>Morus nigra</i>	Moraceae	Mulberry	Tree	Fr	In Ayurveda mulberries have been used for the treatment of urine infection and skin infection	Bashona
30	<i>Robiniapseudoacacia</i>	Fabaceae	Kikar/robini a	Tree	Lf	Dried leaves are helpful in treatment of wounds caused by burned	Bashona
31	<i>Angelica glauca</i>	Apiaceae	Chora	Herb	Rt	Medicinal (Gastric, Dysentery, Stomach related problems, Vomiting); Edible	Danogi
32	<i>Taxus baccata</i>	Taxaceae	Rakhal	Tree	Lf, Br	Medicinal (leaf and bark is used in tea and fuel)	Kapil muni

33	<i>Morchella esculenta</i>	Morchellaceae	Guchhi	Fern	Ap	Medicinal (fever), Edible	Danogi, Chhman, Khokhan 2
34	<i>Bergenia ligulata</i>	Saxifragaceae	PashanBhed	Herb	Rt, Lf	Medicinal (Asthma, boils, cuts, wounds, burns, fever, liver complaints, ophthalmia, piles, thirst, kidney stones, urine complaints, diarrhea of cattle's)	Upper Jia
35	<i>Dioscorea deltoidea</i>	Dioscoreaceae	ShingliMingli	Herb	Tb	Medicinal (Oral contraceptive pills, washing clothes)	Danogi
36	<i>Phytolacca acinosa</i>	Phytolaccaceae	Jharka	Herb	Rt, Lf	Medicinal (Stomach cramps, dysentery, wounds, cattle pneumonia, local beverages)	Danogi
37	<i>Urtica dioica</i>	Urticaceae	Ahan	Herb	Lf	Medicinal (Blood purifier, jaundice, skin eruption, astringent, dog bite, wounds, kidney disease, postnatal tonic, throat pain, tonic)	Bashona, Upper Jia
38	<i>Rhus javanica</i>	Anacardiaceae	Titari	Tree	Fr	Medicinal, (Antidote, anti-venous, febrifuge, ophthalmic, candles)	Danogi
39	<i>Valeriana jatamansi</i>	Valerianaceae	Nihanu	Herb	WP	Medicinal (Antidote to sting of insects, Hysteria, Neurosis, Skin diseases); Religious	Danogi
40	<i>Valeriana hardwickii</i>	Valerianaceae	Nihani	Herb	Wp	Medicinal (Skin diseases)	Danogi
41	<i>Ajuga bracteosa</i>	Lamiaceae	Neel kanthi	Herb	Lf, Wp	Medicinal (malarial fever, tonic, astringent, febrifuge)	Danogi

42	<i>Berberis lycium</i>	Berberidaceae	Kashambal	Shrub	Rt, Fr, Wd	Medicinal (snake bite, boils, eye complaints)	Danogi
43	<i>Ficus sarmentosa</i>	Moraceae	Fedu	Climber	Lf, Fr	Fodder, Medicinal (digestive disorder)	Danogi
44	<i>Oxalis corniculata</i>	Oxalidaceae	Malori	Herb	Ap	Medicinal (fresh or dried leaves are anodyne, antiscorbutic, astringent, diuretic, expectorant, febrifuge, irritant, stomachic)	Danogi, Chhman
45	<i>Ricinus communis</i>	Euphorbiaceae	Arandi	Tree	Lf,Sd	Medicinal (abdominal disorders, arthritis, backache, muscle aches, bilharziasis, chronic backache, sciatica, chronic headache, constipation, expulsion of placenta, gallbladder pain, period pain, menstrual cramps, rheumatism, sleeplessness, and insomnia)	Danogi
46	<i>Rubia cordifolia</i>	Rubiaceae	Jamithi	Herb	WP	Medicinal (blood purifier, antioxidant, diuretic, calcium channel blocker, antiplatelet, antidiabetic, antiinflammatory, antistress, immunomodulator)	Danogi
47	<i>Rubus ellipticus</i>	Rosaceae	Akhe	Shrub	Fr, Rt	Medicinal (dysentery, malaria, stomachache, worms)	Danogi
48	<i>Rumex acetosa</i>	Polygonaceae	Malori	Herb	Ap, Rt	Medicinal (inodorous, slightly astringent taste, leaves are refrigerant and diuretic)	Danogi
49	<i>Taxus contorta</i>	Taxaceae	Rakhal	Tree	St, Br, Ap	Medicinal (anti- cancerous, blood purifier, swelling, fever, asthma, contraceptive), fuel, musical instruments	Danogi

50	<i>Thalictrum foliosum</i>	Ranunculaceae	Bharmot	Herb	Wp	Medicinal (diarrhea, loss of appetite and treat eye ache)	Danogi
51	<i>Thymus mongolicus</i>	Lamiaceae	JangliAjwain	Herb	Wp	Medicinal (antifungal, antibacterial, pain reliever during childbirth to mother, whooping cough, epilepsy, skin eruption, reduce excessive bile secretion, juice, alopecia, spasmodic pains, stomach complaint, cold, toothache, kill hookworms, liver compliant)	Danogi
52	<i>Urtica dioica</i>	Urticaceae	Ahan	Herb	Lf	Medicinal (blood purifier, jaundice, skin eruption, astringent, dog bite, wounds, kidney disease, postnatal tonic, throat pain, tonic)	Danogi, Chhman, Kapil muni
53	<i>Viola pilosa</i>	Violaceae	Banaksha	Herb	Lf, Fl	Medicinal (asthma, bronchitis, cold, cough, eye diseases)	Danogi
54	<i>Bergenia ciliata</i>	Saxifragaceae	PashanBhed	Herb	Rt, Lf	Medicinal (Asthma, boils, cuts, wounds, burns, fever, liver complaints, ophthalmia, piles, kidney stones, urine complaints, diarrhoea of cattles)	Danogi
55	<i>Skimmialaureola</i>	Rutaceae	Ner	Herb	Lf	Medicinal (Antiseptic, boils, gastric pain, rheumatism, scabies, small pox)	Danogi
56	<i>Abies pindrow</i>	Pinaceae	Tosh	Tree	Br	Medicinal (Fever, asthma, bronchitis)	Danogi
57	<i>Acorus calamus</i>	Acoraceae	Barin/ Bauch	Herb	Rh, St, Lf	Medicinal (Abdominal pain, asthma, bodyache, bronchitis, cold, cough, cuts, dysentery, epilepsy, fever, headache, hysteria, inflammation,	Khokhan 2

						malaria, pain in neck, skin diseases, snake bite, stomachache, teething in children, tonic, veterinary medicine)	
58	<i>Zanthoxylum alatum</i>	Rutaceae	Tirmira	Shrub	Lf, Sd, Wp	Toothache, fever, carminative	Chhman
59	<i>Allium cepa</i>	Alliaceae	Pyaz	Herb	Sd, Lf	Ear pain (Juice of <i>Allium cepa</i> is used as ear drop), indigestion	Chhman
60	<i>Prunus armeniaca</i>	Rosaceae	Share	Tree	Sd	Digestion improvement, weight loss and joint pains.	Chhman
61	<i>Aesculus indica</i>	Sapindaceae	Khanor	Tree	Sd	Excessive bleeding during menstruation.	Kapil muni
62	<i>Tinospora cordifolia</i>	Menispermaceae	Giloy	Herb	Wp, Rt	Urinary tract infections, infertility, liver diseases.	Kapil muni, Upper Jia
63	<i>Pinus roxburghii</i>	Pinaceae	Chir	Tree	Wp, Lf	Anti-inflammatory, analgesic.	Kapil muni
64	<i>Salvia spleahdens</i>	Lamiaceae	Ram Tulsi	Herb	Lf	To treat Fungal infection in skin	Khokhan 2
65	<i>Ricinus sp.</i>	Euphoubiaceae	Dalda	Tree	Sd		Khokhan 2
66	<i>Pistacia intergerrima</i>	Anacardeaceae	KakarSinghi	Tree	Fr	For cough and cold	Khokhan 2
67	<i>Viola odorata</i>	Violaceae	Banaksha	Herb	Fl	For cough and cold	Khokhan 2, Upper Jia
68	<i>Dioscorea deltoid</i>	Dioscoreaceae	ShingliMingli	Climber	R	For scorpion and insects bites and stomach related problems	Khokhan 2
69	<i>Coriandrum sativum</i>	Apiaceae	Dhaniya	Herb	St, Sd	Antioxidant, Lower Blood pressure and for Improving digestion	Upper Jia

70	<i>Allium sativum</i>	Liliaceae	Lehsun	Shrub	Br	Cough, Cold and immunity booster	Upper Jia
71	<i>Curcuma longa</i>	zingiberaceae	Haldi	Herb	Rh	To treat wound and sores in throat	Upper Jia
72	<i>Carica papaya</i>	Caricaceae	Papaya	Tree	Lf	To treat Jaundice, Liver cancer	Upper Jia

Abbreviations: Wp- whole plant, Lf- Leaf, Tw- Twig, Fl- Flower, Bk- Bark, Sd- Seed, R-Root, Tu- Tuber, Bk- Bark, Wd- wood,



## Destilas of respondent interviewed to assess their knowledge about medicinal and aromatic plants in Jari Cluster

## Khokan-2 VFDs, Khokan Panchayat

S.No.	Name of respondents	Father's Name	Gender	Age	Education	Occupation	Category (Gen/SC/ST/OBC)	Traditional Vaidays (Yes/No)	Medicinal Cultivator/Collector
1.	Mrs. Kamla Devi	Mr. Jehri Ram	Female	50 Years	—	Housewife	Gen	No	Collector
2	Mr. Hari Singh	Mr. Durga Das	Male	46 Years	middle	Agriculture	Gen	No	Collector
3.	Mr. Dhani Ram	Mr. Shobha Ram	Male	40 years	middle	Agriculture	Gen	No	Collector
4.	Mr. Panna Lal	Mr. Ram Nath	Male	45 Years	primary	Agriculture	Gen	No	Collector
5.	Mr. Tikam Ram	Mr. Shobha Ram	Male	42 Years	matric	Agriculture	Gen	No	Collector
6.	Mr. Khem Singh	Mr. Shyam Singh	Male	55 Years	matric	Agriculture	Gen	No	

									Collector
7.	Mr. Uttam Singh	Mr. Thakar Das	Male	65 Years	primary	Agriculture	Gen	No	Collector
8.	Mrs. Tamanna	Mr. Amar Nath Chand	Female	27 Years	+2	Agriculture	Gen	No	Collector
9.	Mr. Inder Dev	Mr. Parmanand	Male	69 Years	middle	Agriculture	Gen	No	Collector
10.	Mr. Puneet	Mr. Tikam Ram	Male	31 Years	+2	Agriculture	Gen	No	Collector
11.	Mr. Durga Das	Mr. Parmanand	Male	75 Years	primary	Agriculture	Gen	No	Collector
12.	Mr. Chuni Lal	Mr. Beli Ram	Male	26 Years	matric	Agriculture	Gen	No	Collector
13.	Mrs. Meera Devi	Mr. Sheru Ram	Male	46 Years	matric	Agriculture	Gen	No	Collector

### Jari VFDs, Jia Panchayat

S.No.	Name of respondents	Father's Name	Gender	Age	Education	Occupation	Category (Gen/SC/ST/OBC)	Traditional Vaidays (Yes/No)	Medicinal Cultivator/Collector
1.	Mrs. Kusum Jaryal	Mr. Pritam Singh Jaryal	Female	52 Years	B.A	Housewife	Gen	No	Collector
2.	Mrs. Soma Devi	Mr. Gopi Chand	Female	36 Years	Primary	Housewife	Gen	No	Collector
3.	Mr. Diwan Singh	Mr. Chet Ram	Male	54 Years	Matric	Agriculture	Gen	No	Collector
4.	Mrs. Sita Jamwal	Mr. Mahender Singh Jamwal	Female	42 Years	Matric	Housewife	Gen	No	Collector
5.	Mr. Narain Singh Jamwal	Mr. Beli Ram	Male	66 Years	+2	Retd. Animal husbandary dept.	Gen	No	Collector
6.	Mrs. Dakshila	Mr. Bhupender	Female	38 Years	+2	Agriculture	Gen	No	Collector

7.	Mr. B.S. Jamwal	Mr. C.R. Jamwal	Male	76 Years	Graduate	Retd. Assistant commandant ITBP	Gen	No	Collector
8.	Mrs. Seema Jamwal	w/o Mr. Narender Singh Jamwal	Female	43 Years	M.A. B.E.D	Teacher	Gen	No	Collector
9.	Mr. Hari Prakash Sharma	Mr. Atma Ram	Male	76 Years	M.SC. Zoology	Retd. H.P. Government employee	Gen	No	Collector
10.	Mrs. Rama Jamwal	w/o Mr. Maheshwar Jamwal	Female	42 Years	Matric	Housewife	Gen	No	Collector

### Chhaman VFDs, Danegi Panchayat

S.No.	Name of respondents	Father's Name	Gender	Age	Education	Occupation	Category (Gen/SC/ST/OBC)	Traditional Vaidays (Yes/No)	Medicinal Cultivator/Collector
1.	Nirmal Kumar	Dhine Ram	Male	49 years	+2	Panchayat Secretary	General	No	Collector
2.	Binod Kumar	Mahinder Singh	Male	35 years	Graduation	Agriculture	General	No	Collector
3.	Khub Ram	Jhabe Ram	Male	47 years	+2	Agriculture	General	No	Collector
4.	Narender	Ram Nath	Male	50 years	Primary	Agriculture	General	No	Collector
5.	Chabel Singh	Tulsi Ram	Male	44 years	Matric	Agriculture	General	No	Collector
6.	Prem Chand	Ram Nath	Male	54 years	Middle	Agriculture	General	No	Collector
7.	Saravdhyal	Ram Nath	Male	47 years	Middle	Agriculture	General	No	Collector
8.	Arvind Singh	Prem Chand	Male	20 years	+2	Agriculture	General	No	Collector
9.	Tikkam Ram	Pritam Chand	Male	40 years	Matric	Agriculture	General	No	Collector
10.	Ram Singh	Hari Lal	Male	52 years	Middle	Agriculture	General	No	Collector
11.	Sumit Kumar	Kheb Ram	Male	25 years	+2	Agriculture	General	No	Collector

**Kapil Muni VFDs, Bashona Panchayt**

S.No.	Name of respondents	Father's Name	Gender	Age	Education	Occupation	Category (Gen/SC/ST/OBC)	Traditional Vaidays (Yes/No)	Medicinal Cultivator/Collector
1.	Radha	Dinesh Singh Guleria	Female	43 years	+2	Education dept. Govt. employ	General	No	Collector
2.	Ghanshyam	Hari Chand	Male	44 years	Matric	Horticulture	General	No	Collector
3.	Indira Devi	ChanderjeetGuleria	Female	45 years	M.A.	Agriculture	General	No	Collector
4.	Achhar Singh	Yudhishtar Singh	Male	59 years	Matric	Retired	General	No	Collector
5.	Kehar Singh	Ram Lal	Male	47 years	Middle	Agriculture	General	No	Collector
6.	Kiran Kumar	Om Prakash	Male	38 years	Matric	Agriculture	General	No	Collector
7.	Ved Ram	Kheleh Ram	Male	48 years	8th	IPH dept. employ	General	No	Collector
8.	Yodh Raj	Thakar Das	Male	47 years	+2	Vet. dept. employ	General	No	Collector
9.	Vir Singh Guleria	Ram Singh	Male	40 years	Master	Govt. employ	General	No	Collector
10.	Jehar Singh	Puran Singh	Male	78 years	Primary	Agriculture	General	No	Collector
11.	Manju Devi	Duni Chand	Female	30 years	10th	Household	General	No	Collector

**Annexure-VIII**

**Medicinal plants used by the local community in Keylong cluster Lahaul Valley, Himachal Pradesh**

<b>Taxa /Family</b>	<b>Local name</b>	<b>Altitudinal range (m)</b>	<b>Locality</b>	<b>LF</b>	<b>Parts used</b>	<b>Indigenous uses</b>
	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>
<b>Adiantaceae</b>						
<i>Adiantum venustum</i> Don	Raj	2510-3600	S	F	Fronde	Medicinal (Fever, skin eruption)
<b>Alliaceae</b>						
<i>Allium victorialis</i> L.	Gokpa	3400-3800	S	H	Lf,Bb	Medicinal (Anti-diarrhoea); Edible
<b>Apiaceae</b>						
<i>Angelica glauca</i> Edgew.	Chaura, Chonra	2700-3510	S	H	Rt,Sd	Medicinal (Dysentery, gastric complaints, menorrhoea, stomach disorder, vomiting, bronchitis); Edible (flavoring agent); Essential oil
<i>Bunium persicum</i> B. Fedtsch	Jeera, Kalagira	2760-3700	P, Q, R, S	H	Fr, AP, WP, Sd	Medicinal (Abdominal pain, loss of appetite, back pain, liver problems, dysentery in domestic animals); Edible (condiment)
<i>Bupleurum falcatum</i> L.		3010-3855	Q, R, S	H	Rt	Medicinal (Abdominal inflammation, fever, liver complaints); Edible; Fodder
<i>Carum carvi</i> L.	Gonyorog, Gonyod, Shingu Jeera, Gsyon	2700-3650	P, Q, R	H	WP, Sd	Medicinal (Carminative, cold, cough, dyspepsia, fever, rheumatism, stomach disease, back pain, nose pain, curing gastric disorder in animal); Edible
<i>Chaerophyllum aromaticum</i> L.	Shakkara	3000-3400	S	H	WP, Rt, Lf	Medicinal (Indigestion); Edible (roots along with mint leaves are acts as flavor agent); Soap preparation
<i>C. reflexum</i> Lindl.	Ampang, Shakrag	2500-3670	P, R	H	AP, Rt	Medicinal; Edible; Fodder
<i>C. villosum</i> Wall. ex DC.	Shakkara, Methapatees, Nyo	2600-3600	Q	H	WP	Medicinal (Indigestion); Edible (flavor agent by mixing its roots & mint leaves);

						Fodder
<i>Cortiadepressa</i> DC.		3400-4000	R	H	WP	Medicinal (Rheumatism, sedative, stomachache); Fodder
<i>Heracleum thomsonii</i> Cl.	Dundu	2700-3520	P, Q, R, S	H	AP, WP	Medicinal (Oxytoxic); Fodder
<i>H. candicans</i> Wall. ex DC.	Dundu, Raswal	2690-3660	P, R, S,	H	AP, St,Rt	Medicinal (Eczema, ring worm infection, leucoderma, menstrual disorder); Edible; Fodder
<i>Pimpinella diversifolia</i> DC.		2700-3430	S	H	WP	Medicinal (Carminative, stomach disorder, cold, cough)
<i>Pleurospermum candollii</i> (DC.) Benth. ex Cl.		3500-4000	B,H	H	Rt	Medicinal (Fever)
<i>Selinum coniiifolium</i> (Wall. ex DC.) Benth. & Hk.	Chatra, Bodangar, Chonra	3200-3540	S,R,	H	Rt, Lf	Medicinal (Cough, asthma, hysteria, nervus tonic, sedative, incense, spices, local liquor, antibacterial, analgesic); Edible (chutney preparation); Fodder
<i>S. elatum</i> Edgew.		3270-3420	R	H	Rt	Medicinal (Nervine sedative); Religious; Miscellaneous (insecticidal, incense)
<i>S. vaginatum</i> (Edgew.) Cl.	Matosal	2710-3630	S	H	Rh, AP	Medicinal (Nervine sedative, hysteria, dysmenorrheal, liquor preparation, skin disease); Edible; Fodder
<b>Asteraceae</b>						
<i>Achillea millefolium</i> L.	Chabu, Shugumentog	2700-3600	P,R, S,	H	Fl, WP	Medicinal (Carminative, tonic, stimulant, toothache, cough, cold, insect repellent, aromatic, diaphoretic ); Religious; Ear ring
<i>Anaphalis busua</i> (Buch. - Ham. ex Don) DC.		2710-3600	R, S	H	Fl, Lf	Medicinal (Antibacterial, checks bleeding)
<i>A. contorta</i> (D. Don) Hk.	Telgang	2700-4000	L, Q, R, S	H	WP	Medicinal (Cold, cough, insect repellent)
<i>A. nepalensis</i> (Spreng.) Hand.	Tawa	3300-3520	S	H	WP	Medicinal (Spermatorrhoea)
<i>Arctium lappa</i> L.	Pichawag	3200-3420	R	H	Rt, Inf	Medicinal (Gastric, burns); Religious; Miscellaneous (burs used for repelling rodents)
<i>Artemisia biennis</i> Willd.	Karkatang, Khampa	2510-3950	Q, R, S	H	AP, Lf	Medicinal (Against obesity); Religious (incense, smoke purifier)
<i>A. dubia</i> Wall ex Besser		3100-3430	Q	H		Medicinal
<i>A. dracuncululus</i> L.	Chamary, Burtse	2500-4000	L, Q, R,	H	WP	Medicinal (Carminative for animals, throat)



			S			infection, toothache, menstrual cycle)
<i>A. gmelinii</i> Web. ex Stechm.	Nurcha, Karkatang	2510-4000	L, P, Q, R, S	H	Lf	Medicinal (Carminative, vermifuge)
<i>A. laciniata</i> Willd.	Bintso	2510-3450	L, R, S	H	Lf	Medicinal (Cuts, wounds, antiseptic cure foot infection of livestock)
<i>A. macrocephala</i> Jacq. ex Bess.	Khampa	2700-3520	S	H	AP, Lf	Medicinal (Rheumatism, joint pain, skin eruption, aromatic); Religious (smoke purifier)
<i>A. maritima</i> L.	Seski, Nyurcha, Garpeg, Nyurchi, Sensi	2600-3800	L, P, R, S	H	Lf, Fl	Medicinal (Tonic, remove abdominal parasites, anthelmintic, antiseptic, blood purifier, gastric disorder); Edible (bunch grass used for storing the boiled water after sprinkling the sattu or roasted barley (thukpa)); Fuel (leaves are good non-conductor of heat); Fodder (horse feed during cold); Religious (incense, smoke purifier); Miscellaneous (cushion forbidding, to check bees from nest)
<i>A. minor</i> Jacq. ex Bess.	Seski, Phurang	3000-3500	L	H	AP, Lf	Medicinal (Indigestion, dermatitis, appetizer); Religious (incense, smoke purifier)
<i>A. nilagarica</i> (Cl.) Pamp.	Chirmara	2990-3490	L	H	WP	Medicinal (Abscess, analgesic, anthelmintic, antiseptic, antispasmodic, asthma, ear complaints, epilepsy, haemostat, headache, menstrual complaints, nervous disease, peptic ulcer, skin disease, sores, stomachache, tonic, vermifuge, wounds); Fodder; Religious; Miscellaneous (local brooms)
<i>A. parviflora</i> Buch. - Ham. ex D. Don	Garprek, Nireha	3230-3600	P, Q	H	Lf, Fl, Sd	Medicinal (Carminative, vermifuge, throat infection, insecticide, aromatic); Edible; Religious
<i>A. salsoides</i> Willd.		2730-3460	R	H	AP	Medicinal (Intestinal problem)
<i>A. sieversiana</i> Ehrh. ex Willd.	Khamchu	2720-3100		H	Lf, Fl, Rt	Medicinal (Intestinal worms, bronchitis, aphrodisiac, jaundice, joint pain, antiseptic)
<i>Aster falconeri</i> (Cl.) Hutch.	Ba-sha-ka	3300-3820	S	H	Lf	Medicinal (Anemia)

<i>Chrysanthemum pyrethroides</i> (Kar & Kir.) B. Fedtsch.		3430-3750	S	H	Fl, WP	Medicinal (Rheumatism, poultice for boils, fever, arthritis, septic); Religious (incense)
<i>Cirsium verutum</i> (D. Don.) Spreng.	Khibsha	2990-3570	L, P, R	H	Ft, Rt	Medicinal (Constipation, dyspepsia, skin ailments, chest pain, tonic); Edible
<i>C. wallichii</i> DC. var. <i>glabratum</i> (Hk.) Wendelbo	Chawag	2810-3430	L, R, S	H	St, Lf	Medicinal (Dysentery, chest pain, quench the thirst); Edible; Fodder
<i>Cousiniathomsonii</i> Cl.	Changchher, BachaC hawag, Khibsha	2720-4000	L, Q, R, S	H	WP, Ft	Medicinal (Cure body pain, swelling due to sprain, diuretic); Edible; Religious (mixing of it with <i>Waldheimia glabra</i> is used as incense)
<i>Cremanthodium marnicoides</i> Good	Rekonpa	2600-3750	S	H	Fl	Medicinal (Peptic ulcer, dysentery, liver diseases)
<i>C. decaisnei</i> Cl.	Rhend	2900-3800	S	H	AP	Medicinal (Bodyache)
<i>Echinops cornigerus</i> DC.	Chawag	2520-3500	L, R, S	H	WP	Medicinal (Cold, cough, promote teeth of infants, fever, urinary trouble, tonic, septic, food poisoning); Edible
<i>Erigeron alpinus</i> L.	Bashakar	3370-3850	R, S	H	AP	Medicinal (Cough, cold); Fodder
<i>E. canadensis</i> L.	Patil	2700-3650	L, P, R, S	H	AP	Medicinal (Diarrhoea, dysentery)
<i>E. multiradiatus</i> (DC.) Benth. ex Cl.	Shipuk	2730-3760	S	H	AP	Medicinal (Stomach pain); Fodder
<i>Galinsoga parviflora</i> Ruiz & Pav.		2720-3565	S	H	WP	Medicinal (Antidote to snake poison and nettle stings, checks bleeding); Fodder
<i>Inula grandiflora</i> Willd.	Mano,	3300-3520	S,	H	WP	Medicinal
<i>Jurinella macrocephala</i> (Royle) Aswal	Dhoop	Above 3630	S	H	Rt	Medicinal (Antiseptic, colic, fever during child birth, laxative, skin eruption); Religious (incense in temples)
<i>Lactucalessertiana</i> (DC.) Cl.		2740-3510	S	H	AP	Medicinal (Renal colic); Fodder
<i>Picris hieracioides</i> L.		3200-3710	L, P, Q,	H	AP	Medicinal (Purgative)

			R,S			
<i>Prenanthes brunoniana</i> Wall. ex DC.	Kumochanu	2500-3300	S	H	WP	Medicinal (Poultice, sores, wounds); Fodder; Miscellaneous (pot herb)
<i>Saussurea albescens</i> (DC.) Sch.-Bip.	Bacha-Shang, Drapada, Prabachi	2810-3320	P,R	H	Lf	Medicinal (Spasmolytic, bronchitis, skin eruption); Miscellaneous (cotton obtained from leaves used for lighting fire)
<i>S. costus</i> (Decne.) Sch.-Bip.	Kuth	2600-3450	L	H	Rt	Medicinal (Asthma, blood purifier, chronic bronchitis, dysentery, skin disease, stomachache, ulcer, toothache, relieving pain, rheumatism, insect repellent, laxative); Incense
<i>S. gnaphalodes</i> (Royle) Sch.-Bip.		2800-4000	L,S	H	WP	Medicinal (Kidney problem, cough, cold)
<i>S. taraxacifolia</i> Wall. ex DC.		3450-4000	S	H	WP	Medicinal (Ulcer, cold, headache)
<i>Scorzonera virgata</i> (L.) DC.	Thunbu	3570-3800	P	H	AP	Medicinal (Cure constipation)
<i>Senecio graciliflorus</i> (L.) DC.	Zerjum	3210-3860	Q, R,S	H	WP	Medicinal (Antidote against insect bite, ring worm disease, pussied ear, poisonous to cattle)
<i>S. krascheninnikovii</i> Schisch.		2920-3690	L,P, R, S	H	Disc floret	Medicinal (Antiseptic)
<i>S. laetus</i> Edgew.	Parpat, Sangebala	3190-3340	S	H	WP	Medicinal (Fever, abdominal pain, inflammation of mouth, sore throat)
<i>Sonchus oleraceus</i> L.	PanuAag	2640-3830	Q, R, S	H	Fl,AP,Lf, Latex	Medicinal (Febrifuge, jaundice, galactagogue, liver complaints, tonic); Edible; Fodder
<i>S. wightianus</i> DC.		2580-3740	L, P, Q, R, S	H	Lf, Latex, Rt	Medicinal (Cough, bronchitis, asthma, jaundice)
<i>Tanacetum dolichophyllum</i> Kitam.	Khampa	3400-4000	S	H	WP	Medicinal (Nasal drops, headache, body ache, incense, insecticide); Religious (for dhoop)
<i>Taraxacum officinale</i> Wigg.	Paranbala, Quanti, Sarkhen Mentok, Dudhi	2710-3800	L,P, Q, R, S	H	WP	Medicinal (Healing purpose, bandage of cuts, headache, fever, liver, kidney, chronic disease of the digestive organs, cure jaundice, inflammation of the liver, loss of

						appetite, food poisoning, antibiotic, tonic, blood purifier, hepatitis, migrains, foreheads); Edible; Fodder; Religious; Musical instrument; Temporary tattooing of hands
<i>Youngia tenuifolia</i> (Willd.) Babcock & Stebbins		3200-3600	P, S,	H	Lf, Fl	Medicinal (Jaundice)
<b>Balsaminaceae</b>						
<i>Impatiens glandulifera</i> Royle	Mewa	2500-3510	L	H	Fl, Sd	Medicinal (Cooling, tonic, dye); Religious
<i>I. sulcata</i> Wall.		3100-3620	S	H	Sd	Medicinal (Urticaria, itching, eczema, pimples, abortifacient); Edible
<b>Berberidaceae</b>						
<i>Berberis jaeschkeana</i> L.	Kaymali	Above 3000	P	Sh	Rt, Ft	Medicinal (Eye trouble, fever, stomach disorders, skin diseases, blood purifier, astringent, diuretic, jaundice, menorrhoea); Edible; Fuel
<i>B. pachyacantha</i> Koehne	Karpa	2500-3640	P	Sh	Ft, Rt	Medicinal (Stomach trouble, fever, dye); Fuel; Religious
<i>B. pseudumbellata</i> Parker	Pakkad	2600-3630	L, P, Q, R, S	Sh	Ft, Rt, Lf	Medicinal (Intestinal disorder, eye trouble, oxytocic, throat ache); Edible; Fuel
<b>Betulaceae</b>						
<i>Betula utilis</i> D. Don	Bhojpatra, Shag, Bhuj	3050-4000	S	T	St, Br, Bk, Lf	Medicinal (Curing redness in eyes antiseptic, antiseptic, burns, cuts, contraceptive, ear complaints, hysteria, jaundice, spermicidal, wounds); Fuel; Fodder; Religious; Small timber; Agricultural implements; Miscellaneous (plows, book covers, spoons, saddle equipment, shutters, tifen for caring food items)
<b>Boraginaceae</b>						
<i>Arnebia euchroma</i> Royle ex Benth.	Ratanjot, Khomig	2650-4000	S	H	Rt	Medicinal (Abortifacient, hair tonic); Edible (pickle preparation); Religious; Miscellaneous (dye)
<i>Cynoglossum lanceolatu</i>		2600-3520	L, Q, R	H	WP	Medicinal (Aphrodisiac,

<i>m</i> Forssk.						cold,cough,wounds)
<i>C. wallichii</i> G. Don var. <i>glochidiatum</i> Wallich ex Benth.	Kochi Shuwer	2700-3740	R, S	H	Rt	Medicinal (Dyspepsia, digestive disorders)
<i>Eritrichium canum</i> (Benth.) Kitamura	Changser, Tukse	3420-3460	S	H	WP	Medicinal (Hasten child birth)
<i>E. canum</i> (Vill.) Schrad. ssp. <i>villosum</i> (Ledeb.) Brand		2820-3650	S	H	WP	Medicinal (Facilitates children birth)
<i>Hackelia uncinata</i> (Royle ex Benth.) Fischer		2600-3450	Q	H	Rt	Medicinal (Piles)
<i>Lindelofia longiflora</i> (Royle ex Benth.) Baill. var. <i>falconneri</i> (Cl.) Brand		2960-3980	L, Q,S	H	Lf	Medicinal (The leaves are ground, warmed mixed with flour, fat and borax & applied as poultice remedy for diarrhoea)
<i>Onosma hispida</i> Wall. ex G. Don	Kaume	3410-3550	S	H	Rt, Lf	Medicinal (Alternative stimulant, blood purifier, cuts,swells,ulcer,wound); Religious; Miscellaneous (lamma people use the pink dye for lamistic ceremonies)
<b>Brassicaceae</b>						
<i>Arabidopsis thaliana</i> (L.) Heynh.		2700-3600	S	H	WP	Medicinal (Treatment of sores in mouth)
<i>Capsella bursa-pastoris</i> L.	Maslam	2550-3855	L,R,Q	H	WP	Medicinal (Blood purifier, diarrhoea, dropsy, gonorrhoea, urinary trouble, cuts, fever, wounds); Edible; Fodder; Miscellaneous (pot herb)
<i>Cardamine impatiens</i> L.		2830-3540	L,Q	H	WP	Medicinal (Stimulant, diuretic, fever); Fodder
<i>Eruca sativa</i> Mill.		2900-3400	L	H	WP, Sd, AP	Medicinal (Aphrodisiac); Edible; Fodder
<i>Erophila verna</i> L.		3205-3510	P,Q,R	H	Lf,Fl	Medicinal (Mouth sores)
<i>Lepidium latifolium</i> L.	Shangshu, Tharag	3210-3430	S	H	AP	Medicinal (Cure rheumatic pain); Edible
<i>L. virginicum</i> L.		3250-3400	R	H	AP	Edible
<b>Campanulaceae</b>						
<i>Campanula aristata</i> Wall.		2990-3440	S	H	AP	Medicinal; Fodder

<i>C. pallida</i> Wall. var. <i>tibetica</i> (Hk. & Th.) Hara		3390-3670	R	H	AP	Medicinal (Wounds)
<i>Codonopsis clematidea</i> (Schrenk) Cl.	Golchokpa	2800-3530	R,S	H	Sd,Fl	Medicinal (Rheumatism, swelling due to sprain, skin disease)
<i>C. ovata</i> Benth.		3420-3630	Q,R	H	Lf	Medicinal (Oxytoxic, wound)
<i>C. rotundifolia</i> Benth.		3200-3400	S	H	Rt	Medicinal (Poultice to stop cutaneous eruption)
<b>Cannabaceae</b>						
<i>Cannabis sativa</i> L.	Bhang, bang	2600-3500	L,P,Q,R,S	H	Sd, Bk,St	Medicinal (Anthelmintic, appetite, bowel complaints, bronchitis, cuts, dyspepsia, ear, eye complaints, gonorrhoea, narcotic, piles, skin disorder, skin eruption, cold, cough, convulsions, cramps, epilepsy, laxative, nervine stimulant, paralysis of tongue, sleeping pills, tetanus); Edible (condiment); Fodder; Religious; Miscellaneous (local shoe: Pula is prepared)
<b>Caprifoliaceae</b>						
<i>Viburnum cotinifolium</i> D. Don	Bhutni Kimota, Khimata	2680-3850	S	Sh	Bk, Fr	Medicinal (Hepatic, digestive trouble, urino genital troubles); Edible; Fodder; Fuel
<b>Caryophyllaceae</b>						
<i>Cerastium cerastoides</i> (L.) Britton Mem.		3060-3420	S	H	WP	Medicinal (Backache, headache, renal pain, cough)
<i>Gypsophila cerastioides</i> D. Don.		3000-3410	P	H	WP	Medicinal (Boils, wound)
<i>Saginasaginoides</i> (L.) Karsten	Kanganchoo	3300-3600	P	H	WP	Medicinal (Headache)
<i>S. edgeworthii</i> Bocquet	Gandoli	2500-4000	L,Q,R,S	H	AP, Lf	Medicinal (Eye infection); Fodder
<i>S. gonosperma</i> (Rupr.) Bocquet	Sukpa	3300-4000	S	H	AP	Medicinal (Rheumatic pain, soap)
<i>S. indica</i> Roxb. ex Oth		3310-4000	P,S	H	Rt,AP	Medicinal (Dysentery); Fodder

<i>S. moorcroftiana</i> Wall. ex Benth.		3300-3830	R	H	AP	Medicinal (Fever, dysmenorrhoea, puerperal infection); Fodder
<i>S. vulgaris</i> (Moench) Garcke	Gandoli	2950-3400	R,S	H	In	Medicinal (Bronchitis, asthma); Edible; Miscellaneous (pot herb, children play with inflated calyx).
<i>Stellaria media</i> L.	Shichi	2600-3450	S	H	WP	Medicinal (Burns, boils, bone fracture, wounds); Edible; Fodder
<b>Crassulaceae</b>						
<i>Rhodiola heterodonta</i> (Hk. & Th.) A. Boriss.	Churupa	2930-4000	R	H	AP	Medicinal (Cough, lung infection)
<b>Chenopodiaceae</b>						
<i>Chenopodium album</i> L.	Em, Ear, Ayar	2610-3855	L, P,R, S	H	Lf, Br	Medicinal (Indigestion); Edible; Fodder
<i>C. album</i> L. var. <i>opulifolium</i> (Schrad.) Aswal	Am .Ayar	2610-3460	Q,R, S	H	Sd, Lf, Fl	Medicinal (Constipation); Edible; Miscellaneous (pot herb)
<i>C. botrys</i> L.	Sokann, Sanyek	2510-3550	Q, S	H	Lf, Fl	Medicinal (Gastric disorder, headache due to gall bladder, liver disease, anthelmintic diuretic, laxative); Edible
<i>C. foliolosum</i> (Moench) Aschers.	Khupalda, Sanyek	2890-3650	P, S	H	Lf, Fl	Medicinal (Indigestion); Edible ( after boiling in the milk); Miscellaneous (ornamental)
<i>C. hybridum</i> L.	Sukna	3120-3450	P, R,S	H	Lf, AP	Medicinal (Indigestion); Edible (as soup for tukpa)
<b>Convolvulaceae</b>						
<i>Convolvulus arvensis</i> L.	Grachi	2730-3720	L, P,Q,R	H	WP	Medicinal (Laxative, purgative, burns, bruises)
<i>Ipomoea eriocarpa</i> R. Br.	Martunga	3020	L	H	AP	Medicinal (Rheumatic pain, cuts, wounds, poisonous)
<i>I. purpurea</i> Roth		3230	L	H	Sd,	Medicinal (Purgative);

					WP	Fodder
<b>Crassulaceae</b>						
<i>Sedum ewersii</i> H. Ohba	Shrollo	2600-4000	Q,R,S	H	Lf,St	Medicinal (Toothache, appetite, soothing effect); Edible
<b>Cucurbitaceae</b>						
<i>Diplocyclospalmatus</i> (L.) Jeffrey		3400-3720	P	H	Sd	Medicinal (Diabetes)
<b>Cupressaceae</b>						
<i>Juniperus communis</i> L.	Petada, Shukpa, Dhup	2500-4000	L, Q,R, S	Sh	WP, St, Fr	Medicinal (Kidney disorder, malfunctioning of kidney, liver, bladder, heart disease, nervous disorder, oil- from barriers inhaled as vapors, or taken in the form of pills, dropsy mucous discharge, antibiotic for animal, repel flies); Fuel; Religious (smoke purifier, against evil sprits, leaves dipped three times in arak or chang as a mark of celebration)
<i>J. polycarpus</i> Boiss.	Shur, Leyur	2500-4000	L, P, Q, R, S	T	Lf, WP, Fr	Medicinal (Asthma, oil is used antibiotic for animal, repel flies, nervous disorder, stomach cramp); Fuel; Timber; Religious (incense, smoke purifier, leaves dipped three times in arak or chang as a mark of celebration, against evil sprits); Agricultural tools
<b>Elaeagnaceae</b>						
<i>Hippophaerhamnoides</i> L.	Gartsak, Tirkug Chharma ,Sarla	2800-3650	P,Q ,R,S	Sh	WP	Medicinal (Aphrodisiac, lung disease, indigestion, oxytoxic); Edible; Fuel; Small timber; Miscellaneous(handle for implements, shinning of ornaments, fencing)
<i>H. salicifolia</i> D. Don	Sarla	3100-3640	P, Q	T	Fr, Br	Medicinal (Cuts, ulcer, wounds, cough, fever, dandruff of hairs and skin disease); Edible; Fuel; Fodder; Small timber; Agricultural tools
<b>Ephedraceae</b>						
<i>Ephedra gerardiana</i> Wall. ex	Kiok, Buchchur, Chhe,	2500-3900	R, S	Sh	WP, Fr	Medicinal (Asthma, blood purifier, cardiac ailment, cough, chronic bronchitis, headache, hepatic disease,



Stapf	Somlata					pneumonia fever, rheumatism, snuff); Edible; Religious; Miscellaneous (tooth brush)
<b>Equisetaceae</b>						
<i>Equisetum arvense</i> L.	Khin	2800-3560	P, S	F	Ashes of plants	Medicinal (Diuretic haemostatic, properlic -kidney, dropsy gravel affection, acidity, dyspepsia); Fodder
<b>Ericaceae</b>						
<i>Rhododendron anthopogon</i> D. Don	Balu	3410-4000	S,	Sh	Lf	Medicinal (Aromatic, bronchitis, cold, cough, gonorrhoea, stomach ailment, tea preparation, reduce birth pains, delivery); Fodder; Religious (smoke purifier, incense); Sold in the market in the name of talisapatara
<i>R. campanulatum</i> D. Don	Radukpa	3400-4000	S	Sh	Rt, Inf, Lf, Fl	Medicinal (Dysentery, fever, headache, remedy for boils, piles, bone fracture of animals, buds are poisonous to goat); Edible; Fuel; Religious (incense, smoke purifier)
<b>Fabaceae</b>						
<i>Astragalus himalayanus</i> Klotzsch	Kayaba Chhutup	2650-3800	Q, S	H	Sd, Fl	Medicinal (Colic, leprosy, stangury)
<i>A. nivalis</i> Kar & Kir.		2990-3500	L, R	H	Rt	Medicinal (Blood purifier)
<i>A. peduncularis</i> Royle ex Benth.	Karan	2850-3550	S	H	AP	Fodder
<i>A. rhizanthus</i> Royle ex Benth	Zomoshing	3000-3800	P, Q, R, S	H	Rt	Medicinal (Heart stimulant, skin disease); Fodder; Miscellaneous (manufacture of paper)
<i>A. subuliformis</i> DC.	Zomoshing	3320-3650	L	H	Gum	Medicinal (Diuretic)
<i>Caragana versicolor</i> (Wall.) Benth	Bramswak, Zomoshing	2900-4000	P, Q, R, S	Sh	Rt	Medicinal (Dysmenorrhoeal); Fodder
<i>Cicer microphyllum</i> Benth.	Banyarts, Vananyarcha, Chiri	2600-3800	R, S	H	Fr, Lf, Sd, AP	Medicinal (Sore mouth disease treatment in cattle, tongue infection, jaundice); Edible; Fodder
<i>Lespedeza juncea</i> (L. f.) Pers.		2700-3500	L	Ush	WP	Medicinal (Oxytoxic)
<i>Lotus corniculatus</i> L.		2700-3650	L, Q, S	H	AP	Medicinal (Anti-inflammatory); Fodder; Religious; Soil binder

<i>Medicago lupulina</i> L.	Gunyok	2980-3600	L,Q, R,S	H	AP	Medicinal (liver, lung disease, jaundice, kidney disorder, pneumonia); Fodder; Miscellaneous (increase fertility)
<i>Oxytropis lapponica</i> (Wahl.) Gay.		3200-3400	Q	H	AP	Medicinal (Joint pain)
<i>Trifolium pratense</i> L.		2990-3650	L,Q,R,S	H	AP	Medicinal (Cough, bronchitis, venereal disease); Edible; Fodder
<i>T. repens</i> L.		2500-3400	S	H	AP	Medicinal (Astringent); Edible; Fodder
<i>Trigonella emodi</i> Benth.	Tuljima, Kuchona, Buksup, Ampang	3250-3400	P	H	AP, In	Medicinal (Aromatic, insect & pest repellants especially wood borer from bean plants, acts as poison when green shoots are eaten); Edible (vegetables); Fodder; Religious
<b>Fumariaceae</b>						
<i>Corydalis govaniana</i> Wall.		2710-3650	Q	H	WP	Medicinal (Antipyretic, diuretic, eye disease, gastric disease, liver, muscle pain, skin disease, syphilis, tonic, leprosy, rheumatism,)
<i>C. vaginans</i> Royle		3300-3630	S	H	AP	Medicinal (Eye complaints)
<b>Gentianaceae</b>						
<i>Gentiana kurroo</i> Royle		3200-3500	S	H	Rt	Medicinal (Appetite, gastric, secretion, stomachic, fever, urinary complaints, cough, appetizer)
<i>Gentianella moorcroftiana</i> (Wall. ex G. Don) Airy Shaw	Ticta	3450-3710	S	H	AP	Medicinal (Febrifuge, blood purifier, fever, cough, rheumatism, gastric)
<i>Swertia ciliata</i> (G. Don) Burt		2710-3600	Q, S	H	AP, Lf	Medicinal (Malaria fever); Fodder
<i>S. cordata</i> (G. Don) Cl.		2740-3620	L,R	H	WP	Medicinal (Anthelmintic, antiperid, appetite, laxative, stomachic, blood disease, febrifuge)
<i>S. petiolata</i> Royle ex D. Don		3300-4000	S	H	AP	Medicinal (Tonic, liver)

<b>Geraniaceae</b>						
<i>Geranium himalayense</i> Klotz.	Porlo	3020-3670	S	H	Rt,Fl	Medicinal (Bruises, stomache); Miscellaneous (ornamental)
<i>G. nepalense</i> Sw.	Laljari, Gajaljhar	2900-4000	L,S	H	Rt	Medicinal (Cuts, jaundice, toothache, ulcer, wounds, stomach complaints)
<i>G. pratense</i> L.	Porlo	2800-4000	R, S	H	AP	Medicinal (Naksur, black dye, poultice to bruises, stomach trouble, cough, jaundice, gastric disorder, headache); Religious
<b>Grossulariaceae</b>						
<i>Ribes orientale</i> Desf.	Nyangada	3400-3800	R	Sh	Lf,Fr	Medicinal (Diuretic); Edible
<b>Iridaceae</b>						
<i>Iris kemaonensis</i> D.Don ex Royle	Praynal	3000-3900	L,P,Q,S	H	Rt, Lf,Sd	Medicinal (Epilepsy, fever, toothache)
<b>Juglandaceae</b>						
<i>Juglans regia</i> L.	Akhrot, Ka, Kaboot	2500-3000	L	T	Br,Lf,Fr	Medicinal (Fruit-coat & bark is useful for teeth cleaning, skin diseases, anthelmintic, astringent, toothache, fungicide, insecticides); Edible; Fodder; Fuel; Timber
<b>Lamiaceae</b>						
<i>Clinopodium vulgare</i> L.		2630-3500	R, S	H	AP	Medicinal (Astringent, carminative, heart tonic); Fodder
<i>Elsholtziaciliata</i> (Thunb.) Hyland.		2540-3420	S	H	Fl	Medicinal (Skin disease)
<i>E. strobilifera</i> Benth.	Ruli	3100-3800	Q	H	Fl, Inf	Medicinal (Bruises, internal burns, wounds)
<i>Hyssopus officinalis</i> L.	Jip-Chi, Chibu	2720-3410	L	H	WP	Medicinal (Stimulant, carminative, pectoral, nervous disorder, toothache, digestive, urterine, resolvent, vurnery, vermifuge, wounds, sprain stress, muscular rheumatism)
<i>Mentha longifolia</i> (L.) Huds.	Takchi, Marini, Madaen	2710-3560	Q, R, S	H	WP	Medicinal (Antiseptic, carminative, digestive, onwound to kill maggots); Edible (flavoring agent)
<i>Nepeta eriostachya</i>		3010-3850	L,R, S	H	WP	Medicinal (Eyes, diuretic)

Benth.						
<i>N. discolor</i> Royle ex Benth.		2700-3805	L	H	WP	Medicinal (Eyes injury &infection,cold,cough); Fodder; Fuel
<i>N. floccosa</i> Benth.		2700-3655	L,S	H	Fl,Lf	Medicinal (Blood purifier, fever, cold)
<i>N. glutinosa</i> Benth.		3310-3855	R	H	WP	Medicinal (Diarrhoea, pneumonia, fever)
<i>N. leucophylla</i> Benth.		3300-3520	R	H	Lf	Medicinal (Malarial fever)
<i>N. podostachys</i> Benth.		2720-3790	P,Q,R	H	Rt,St	Medicinal (Kidneys)
<i>Origanum vulgare</i> L.	Lamaymasha, Massow	2700-3600	P,R,S	H	Lf, AP	Medicinal (Antiseptic, bronchitis, colic, diarrhoea, bath to ladies after child birth); Edible (spice, chatney); Religious (bad sprits)
<i>Phlomisbracteosa</i> Royle ex Benth.		3240-3820	P,Q, S,	H	Fl, AP	Medicinal (Eye tonic, common in household remedies); Miscellaneous (flowers is sucked by children's)
<i>Scutellaria prostrata</i> Jacq. ex Benth.		3310-3640	Q	H	AP	Medicinal (Fever, jaundice,nerve tonic)
<i>Thymus linearis</i> Benth.	Kochi masha	2730-3800	P, Q, R, S	H	WP	Medicinal (Antifungal, antibacterial, pain reliever during childbirth to mother, whooping cough, epilepsy, skin eruption, reduce excessive bile secretion, juice, alopecia or hair loss, spices phlegm counter spasmodic pains, stomach complaint,cold, toothache, kill hookworms, liver compliant,heating effect); Edible (condiment)
<b>Liliaceae</b>						
<i>Polygonatumcirrhifolium</i> (Wall.) Royle		3050-3120	S	H	Tb, Rt,Lf	Medicinal (Aphrodisiac, appetite, blood purifier, nervine tonic,fever,tonic); Edible
<i>P. geminiflorum</i> Decne		3200-3600	S	H	Rt, WP	Medicinal (Tonic, washing of wools)
<i>P. multiflorum</i> L.		2590-3610	S	H	Tb, AP	Medicinal (Tonic,urino-genital disorders); fodder
<i>P. verticillatum</i> L.		2500-3650	S	H	Rhm,Tb	Medicinal (Appetite, Nervine tonic, kidney trouble, wounds); Edible

<b>Malvaceae</b>						
<i>Malva neglecta</i> Wall.	Sotsal	3100-3350	S	H	AP	Medicinal (Malaria, bladder, kidney disorder, laxative); Religious
<i>M. sylvestris</i> L.	Sotsal	3100-3600	P,Q	H	Fl	Medicinal (Stomach cramp, whooping cough)
<b>Morinaceae</b>						
<i>Morinacoulteriana</i> Royle	Dayela, Chawag	2960-3455	R	H	Fl, Rt, WP	Medicinal (Eye complaints); Miscellaneous (flowers as incense)
<i>M. longifolia</i> Wall.	Sibsha	3210-3650	P,R	H	Rt	Medicinal (Boils, wounds, aromatic, unconsciousness)
<b>Oleaceae</b>						
<i>Syringa emodi</i> Wall. ex Royle		2500-3430	S	Sh	Sd, Fl, Br	Medicinal (Fever, stomach disorder); Fodder
<b>Onagraceae</b>						
<i>Epilobium hirsutum</i> L.		3200-3450	R,S	H	AP	Medicinal (Poisonous to cattle)
<b>Orchidaceae</b>						
<i>Dactylorhiza hatagirea</i> (D. Don.) Soo	Salampanja, Hathpanja	3000-3400	S	H	Tb	Medicinal (Antibiotic, wound healing, bone fracture, cough, cold, sexual disability, rheumatism, blood purifier, many ayurvedic and unani medicine preparation, expectorant); Edible
<i>Epipactis helleborine</i> (L.) Crantz		2500-3640	Q, R	H	Lf, Rh	Medicinal (Fever, blood purification, aphrodisiac)
<b>Papaveraceae</b>						
<i>Meconopsis aculeata</i> Royle	Chharbongcha, Chharmen	3200-4000	S	H	WP	Medicinal (Back-ache, colic, renal pain tonic); Religious
<b>Pinaceae</b>						
<i>Pinus wallichiana</i> A.B. Jack.	Lem, Kail	2500-4000	S	T	WP, St, Sd, Lf	Medicinal (Abscess, dislocation of joints, rheumatic pain, ulcer, unconsciousness); Fuel; Timber (making furniture, doors, floors, windows, boxes etc.); Miscellaneous (it provides strength to mud wall, also used in cattle beds & for checking of soil erosion)
<b>Plantaginaceae</b>						
<i>Plantago depressa</i> Willd.	Maran	2610-3410	S	H	WP	Medicinal (Cure dysentery, wounds, piles, infant health); Edible; Fodder

<i>P. himalaica</i> Pilger		2710-3420	R	H	WP	Medicinal (Diarrhoea, dysentery, sedative, headach, lumber pain, renal colic & backache); Edible; Fodder
<i>P. major</i> L.	Karecha	2600-3450	S	H	Sd, Lf	Medicinal (Fever, cough, gastric disorders, stomach disease, wounds)
<b>Poaceae</b>						
<i>Avenafatua</i> L.	Kasam, Gwajung	2680-4000	L, P, R, Q, S	H	AP	Medicinal (Wounds); Fodder
<i>Eragrostis minor</i> Host.		2500-4000	L, Q, R, S	H	Rt, AP	Medicinal (Stomach complaints); Fodder
<i>Phacelurus speciosus</i> (Steud.) C.E. Hubb.		3200-3520	Q	H	AP	Medicinal (Anthelmintic, kills worms); Fodder; Miscellaneous (soil binder)
<b>Podophyllaceae</b>						
<i>Podophyllum hexandrum</i> Royle	Bankakri, Omo-shey, Braburchoi, Pindiyali	2500-3700	S	H	WP	Medicinal (Cough, purgative, chronic constipation, tuberculosis, hepatic, stimulant, vermifuge, kill worms, gynaecological disorder, skin disease as warts, tumors, cancer, childbirth, cuts, wounds, diarrhea, gastric ulcer, hepatic disease); Edible
<b>Polygonaceae</b>						
<i>Bistorta affinis</i> Greene	Chunru, Kapad	2700-4000	Q, R, S	H	AP, Rt, Sd	Medicinal (Cold, diarrhoea, check flatulence, dysentery); Edible; Fodder
<i>Fagopyrum esculentum</i> Moench	Brafo	2490-3700	L, P, Q, R, S	H	Lf, Fr	Medicinal (Sun burns, protect skin disease, colic, abdominal complaints); Edible (chilra local bread is prepared); Fodder
<i>F. tataricum</i> (L.) Gaertn.	Brafo	2490-3700	L, P, Q, R, S	H	Lf, Fr	Medicinal (Colic pain, sun burns, protect skin disease); Edible (chilra local bread is prepared); Fodder
<i>Oxyriadigyna</i> (L.) Hill	Surjilap	2960-3855	R, S	H	WP	Medicinal (Appetite, fever, laxative); Edible
<i>Polygonum alpinum</i> All.	Alipap	3010-3650	P, Q, R, S	H	St	Medicinal (Rheumatic pain); Edible (eaten raw or mixed with onion & pepper); Fodder
<i>P. amplexicaule</i> D. Don		2600-3855	S	H	Rt, Lf	Medicinal (Cough, dysentery, haemostasis, tonic, excess dose cause abortion, wounds, heartburning sensation); Edible; Fodder
<i>P. paronychioides</i> C. A.		3530-3700	Q	H	WP	Medicinal (Diarrhoea, dysentery)

Mey.						
<i>P. plebium</i> R.Br.		2700-3810	L, P Q, R, S	H	AP, Rt	Medicinal (Baldness, lung disease,diarrhoea,dysentery; Miscellaneous(manure)
<i>P. polystachyum</i> Wall. ex Meissn.		3030-3525	R,S	H	AP	Medicinal (Acidity, indigestion); Edible
<i>P. somdevae</i> Aswal et Mehrotra	Nyello	2640-4000	L, S	H	Lf,Rt,Fl	Medicinal (Abscess, antidote to aconite poison, thirst,diarrhoea,giddiness, headache, deodorizer armpits); Edible; Fodder
<i>P. vacciniifolium</i> Wall. ex Meissn.		3000-4000	Q, R	H	Rt,Lf	Medicinal (Tuberculosis); Edible
<i>Rheum australe</i> Spreng.	Archo	3015-3910	Q,R,S	H	St, Lf, AP	Medicinal (Abdominal pain,appetite,asthma,bronchitis,fever,cuts,dysentery,laxat ive,eye disorder, sprain,swelling,ulcer, wounds); Edible
<i>R. moorcroftiana</i> Royle	Revenchini, Rhubarb	3520-4000	R	H	Rt	Medicinal (Internal injury)
<i>Rumex acetosa</i> L.	Surjilove	2900-3470	L,P,Q	H	Lf, AP,Fr	Medicinal (Appetizer, laxative, stomach disease); Edible
<i>R. hastatus</i> D. Don		3220-3630	Q, R	H	Lf	Medicinal (Cuts, wounds, anti nettle sting); Edible
<i>R. nepalensis</i> Spreng.	Napchati	2500-3680	S	H	Lf,Rt,Tw	Medicinal (Boils, colic, cooling, diuretic, dymenorrhoea,purgative, scurvey,swelling of muscle,stomachache); Edible; Fodder
<b>Primulaceae</b>						
<i>Androsace rotundifolia</i> Hardw.	Zigsolomarp	2730-3400	S	H	AP	Medicinal (Stomachache)
<i>Primula denticulata</i> Sm.		3100-3840	S	H	AP,Fl,Rt	Medicinal (Diabetes, headache,appetizer,liver problem, giddiness, pulmonary disease, urinary ailments, kill lice); Fodder
<b>Ranunculaceae</b>						
<i>Aconitum heterophyllum</i> Wall. ex Royle	Bonga, Atees Boa	2900-3600	S	H	Rt	Medicinal (Anthelmintic, cough, diarrhoea, dyspepsia, fever, gall bladder,abdominalpain,gastric,piles, vomits, worms)

<i>Anemone obtusiloba</i> D. Don		2800-3760	S	H	Rt,Sd	Medicinal (On contusions ,menorrhoea,rheumatism, purgative, cooling)
<i>A. polyanthes</i> D. Don		3230-3640	S	H	AP	Fodder
<i>A. rivularis</i> Buch.-Ham.	Chutrak	3100-3560	B	H	WP	Medicinal (Ear complaints,appetizer,gastric,headache,wounds,sores, veterinary medicine <i>i.e.</i> , fracture); Fodder
<i>A. rupicola</i> Camb.	Mangaltukshi	3100-3800	P,S	H	AP	Medicinal (Diuretic); Fodder
<i>Aquilegia fragrans</i> Benth.	Zadul-dorje	2790-3520	S	H	Fl	Medicinal (Headache)
<i>Caltha palustris</i> L.	Horgul, Shomalap	3210-3450	L	H	Rt,Lf	Medicinal (Gonorrhoea, cattle wound, hand clean)
<i>Clematis barbellata</i> Edgew.		3000-3100	S	Sh	Rt,Lf	Medicinal (Itching, skin disorder)
<i>Delphinium cashmerianum</i> Royle	Kasturi-chey, Nakamogoma, Panzi-la	3000-4000	S	H	WP, Fl, Lf	Medicinal (Ascites, abdominal pain, cough, cold,fever,dropsy, dyspepsia, house hold uses,headache, renal pain, swell, stomachic, cuts, wounds)
<i>Thalictrum alpinum</i> L.		3020-3630	S	H	Rt,Lf	Medicinal (Fever)
<i>T. cultratum</i> Wall.		2600-3420	R,S	H	AP, Rt	Medicinal (Urinary infection); Fodder
<i>T. foetidum</i> L.		2700-3200	L	H	Fl,Rt,Lf	Medicinal (Fever, eye disorder); Religious
<i>T. minus</i> L.	Mobje-dung	3210-3400	P	H	AP,Rt	Medicinal (Eye disease, fever); Fodder
<i>T. reniforme</i> Wall.		3010-3320	S,P	H	Rt	Medicinal (Cataract)
<i>T. secundum</i> Edgew.		2600-3600	S	H	AP,Rt	Medicinal (Diuretic, eye disorder, tonic); Fodder
<b>Rosaceae</b>						
<i>Cotoneaster aitchisonii</i> C.K. Schneid.	Rogthali	3420-3700	R	Sh	WP	Medicinal



<i>C. microphyllus</i> Wall. ex <a href="#">Lindl.</a>		3200-3600	R,S	Sh	Fr,Lf,Rt	Medicinal (Astringent, diarrhoea,cuts,wounds); Edible; Fuel; Miscellaneous (basket making)
<i>C. obovatus</i> Wall. ex Dunn.		2600-4000	L,S	Sh	WP	Medicinal (Oxytoxic); Fuel
<i>Fragaria vesca</i> var. <i>nubicola</i> L.	Palla	2500-4000	S	H	Fr, Inf	Medicinal (Earache); Edible (juice are prepared, local wine chhang is made); Fodder
<i>Malus baccata</i> L.	Leejo	2700-3000	L	T	Ft	Medicinal (Dysentery); Edible
<i>P. argyrophylla</i> Wall. ex Lehm.		3200-4000	S	H	Rt,Fl	Medicinal (Angina pectoris,toothache,gingivitis,wound as analgesic); Fodder; Religious
<i>Prunus armeniaca</i> L.	Khumani	3000-3200	L	T	Lf, Sd, AP	Medicinal (Fever, body massage; Edible(seed oil for cooking, hair oil,brews); Fuel
<i>P. cerasoides</i> D.Don		2790-3200	L	T	St,Br,Lf,Fr,F l	Medicinal (Psycho- medicines,swellinds, contusions); Edible; Fodder; Religious
<i>P. cornuta</i> (Wall. ex Royle) Steud.	Krun, Khimor	2500-3300	L,S	T	AP,Fr,Sd,Lf, St	Medicinal (Rheumatism, wounds); Edible; Fodder, Fuel; Agricultural tools
<i>R. webbiana</i> Wall. ex Royle	Chawag	2500-3800	L, P, Q,R, S,	Sh	Fl, Fr, AP	Medicinal (Hepatitis, jaundice, stomachache); Edible; Fuel; Fodder; Religious; Miscellaneous (ornamental, protective cover against grassing by goats)
<i>Sorbus aucuparia</i> Linn.		3000-3200	L	Sh	Fr	Medicinal (Cough, cold); Edible
<b>Rubiaceae</b>						
<i>Galium aparine</i> L.		2500-3600	Q	H	Lf, WP	Medicinal (Astringent, skin disease)
<i>G. asperifolium</i> Wall.		2700-3650	S	H	WP	Medicinal (Skin disease, diuretic, urinary problem)

<i>Rubia cordifolia</i> L.		2500-3210	R, S	H	Rt,St	Medicinal (Dye, tonic, astringent, antidote to snake bite, bacillary dysentery)
<b>Salicaceae</b>						
<i>P. ciliata</i> Wall. ex Royle	Pak butra	2700-3500	L,S,P,Q, R	T	St, Br, Inf,Lf	Medicinal (Treatment of broken limbs of man and animals, tonic, stimulant, blood purifier); Fodder; Fuel; Timber (the drums beams & boards are prepared, packing material); Agricultural tools
<i>Salix acmophylla</i> Boiss.		3200-3300	S	T	Bk, AP	Medicinal (Febrifuge); Fuel; Fodder; Timber
<i>S. alba</i> L.	Chanker	3000-3500	L,P, R, S	T	WP	Medicinal (High fever); Timber; Fuel; Agricultural tools
<i>S. fragilis</i> L.	Shen-bhut	2500-3800	L,P,Q,R, S	T	WP	Medicinal (Scouring teeth); Agricultural implements; Fuel; Fodder; Timber
<i>S. tetrasperma</i> Roxb.		3100-3600	S,L	T	AP	Medicinal (Fever); Fodder; Fuel; Timber; Agricultural tools
<b>Saxifragaceae</b>						
<i>Bergenia ligulata</i> Haw. Sternb.	Silpayi	3400-4000	S	H	Rt,Lf	Medicinal (Asthma, boils, cuts,wounds,burns,fever, liver complaints, ophthalmia,piles,thirst,kidneystones,urinecomplaints,diarrhoea of cattle); Edible
<i>B. stracheyi</i> Hk. & Th.	Silpayi	3300-4000	S	H	Rt, Lf	Medicinal (Kidney stone, poultice, stiff joint, diuretic,antiscorbutic,astringent,fever,ophthalmia,tonic,cuts,wounds); Edible
<b>Scrophulariaceae</b>						
<i>Euphrasia himalayica</i> Wettst.		2760-3510	L,Q, S	H	Lf	Medicinal (Eye disorder)
<i>Leptorhabdos parviflora</i> (Benth.) Benth.		3320-3640	P	H	WP	Medicinal (Anti- inflammatory)
<i>Pedicularis bicornuta</i> Klotzsch ex Klotzsch	Lugruserpo	3520-3855	S	H	AP	Medicinal (Burns, rheumatism,gout); Fodder
<i>P. pectinata</i> Wall. ex Benth.		3420-3855	Q	H	WP	Medicinal (Cold, cough, bodyache, sedative)

<i>Picrorhizakurrooa</i> Royle ex Benth.	Karu	3410-4000	S	H	Rt, Rhm, Lf, St	Medicinal (Anemia, arthritis, asthma, bitter tonic,cardiotonic,cold,dyspepsia,diarrhoea,influenz, diuretic, fever,hepato protective, indigenous system of medicine, jaundice, liver trouble, stomach, laxative, pure circulation blood, large dose ascathritic)
<i>Scrophulariacalycina</i> Benth. &Scroph.		3100-3400	S	H	AP,Lf	Medicinal (Stimulate appetite); Fodder
<i>Verbascum thapsus</i> L.	Kolomasta, Jawarna Loudi, Tombru, Tamaku	2500-3900	Q, R, S,	H	Lf, AP, Sd	Medicinal (Asthma, cough, diarrhoea, dyesentry of sheep, poultice, skin disease,narcotic,fish poisoning, ear infection, dye); Religious
<b>Selaginaceae</b>						
<i>Lagotis kunawurensis</i> (Royle ex Benth.) Rupr.		2900-3900	R	H	Lf	Medicinal (Cough, cold)
<b>Solanaceae</b>						
<i>Hyoscyamus niger</i> L.	Bazerbangh	2600-3630	P, R	H	WP	Medicinal (Asthma,hysteria, muscle pain,whoomingcough,astringent,toothache, sedative); Religious (for certain exorcism lamas burn the seed with fat and blow the smoke into the patients mouth)
<i>Physochlainapraealta</i> (Walp.) Miers.	Dhandhura, Langtang	3300-3530	Q, R	H	WP	Medicinal (Boils, epilepsy,liver complaints, toothache,ulcer)
<b>Tamaricaceae</b>						
<i>Myricaria germanica</i> (L.) Desv.	Hombuk, Hombug	2700-3200	R,S	Sh	St, Br	Medicinal (Rheumatism); Fuel;Religious;Agricultural implements; Miscellaneous (making weaving shuttle)
<b>Urticaceae</b>						
<i>Urtica dioica</i> L.	Achoka, Ann	2950-3500	L,P,R, S	H	Lf	Medicinal (Blood purifier, jaundice, skin eruption); Edible

<b>Valerianaceae</b>						
<i>Nardostachys grandiflora</i> DC.	Jatamansi	3300-4000	S	H	Rt	Medicinal (Blood purifier, cooling, cough, diuretic, tonic, ulcer, snake bite); Religious; Miscellaneous (incense stick & dhoop preparation)
<i>Valeriana jatamansi</i> Jones	Jatamansi	2750-3420	B,S	H	Rt	Medicinal (Aphrodisiac, mental disorder, local beverage, aromatic, insecticide); Religious

**Abbreviations used:** L= Kamring; P= Keylong; Q= Yurnath; R= Sitingri; S= Mooling; Life Form; H= Herb; T= Tree; Sh= Shrub; F= Fern; Cl= Climber; Rt= Root; AP= Aerial Part; Sd= Seed; WP= Whole Plant; Lf= Leaf; Fl= Flower; Rhm= Rhizome; Fr= Fruit; Inf= Inflorescence; St= Stem; Br= Branch; Bk= Bark; Tb= Tuber; Bb= Bulb; and Tw= Twigs

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