

The Rufford Foundation

Final Report

Congratulations on the completion of your project that was supported by The Rufford Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. The Final Report must be sent in **word format** and not PDF format or any other format. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. Please note that the information may be edited for clarity. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to jane@rufford.org.

Thank you for your help.

Josh Cole,
Grants Director

Grant Recipient Details	
Your name	Harish Chander Dutt
Project title	Community involvement in Conservation of Medicinal Plants in four hilly Districts (Doda, Kishtwar, Poonch, Rajouri) of Jammu and Kashmir, India.
RSG reference	14561-1
Reporting period	2014-2015
Amount of grant	£6000
Your email address	hcdutt@rediffmail.com
Date of this report	May 26, 2015

1. Please indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not achieved	Partially achieved	Fully achieved	Comments
<p>Survey and documentation of natural habitats to assess the natural populations of the medicinal plants in four hilly districts of Jammu and Kashmir.</p>			√	<p>Survey and documentation of the natural habitats has been done in all the four hilly districts of the study area. It is concluded that the natural habitats are vulnerable for medicinal plants because the anthropogenic activities like unplanned development, grazing pressure and unscientific exploitation for ethnobotanical use of medicinal plants by the people is posing more threat on the habitat destruction of medicinal plants. The details is given in final project report. Although ethnobotany is getting faded off because of the modernisation in medicinal practices. But this has also posed a threat on the existence of medicinal plants because the expert of ethnobotany are unable to transfer the knowledge to the young ones and the new generation do not follow the scientific methodology for collection. A research paper in this aspect is also accepted for publication in Journal of Ethnopharmacology (Impact factor 2.9)</p>
<p>Carry out awareness programmes through field visits in schools and villages to promote conservation of medicinal plants by cultivating them.</p>			√	<p>Awareness programmes has been conducted in schools, field, tourist destination, and villages for the cultivation of the medicinal plants. Some people are also motivated and initiated cultivation of medicinal plants in the study area.</p>
<p>Preparation and distribution of education material and lectures in local language to cater to the schoolchildren, farmers and village community for awareness and information gathering.</p>			√	<p>Education material in the form of charts and yearly calendars in English and Hindi containing self-clicked photographs of important medicinal plants languages were printed and distributed among the schoolchildren, school authorities, prominent villagers, panchyat members and tourists. Charts and calendars were also distributed among the various science departments of the universities and institutes.</p>

				Brainstorming discussions with the local NGOs has resulted viable project proposals now submitted to the Government of India for funding.
Create an active network comprising of farmers and children to obtain information on local uses of the medicinal plants and Indigenous knowledge (IK) of conservation of medicinal plants.		√		This objective is partially achieved because to organise inter-districts meets for the farmers and schoolchildren require more funds. But within the district few meets were organised where experts from industry and concerned institute talked with the farmers and motivated them for cultivation of medicinal plants. Questionnaire study was also conducted for the Indigenous knowledge on the medicinal plants in the study area.
Features in the print and electronic media on the project, showcasing the most outstanding individuals who will enable the success of the conservation programme.		√		This objective was also partially achieved because no outstanding individuals till date has been recognised who has proliferated the conservation programme. However, some events organised during the project were featured in newspapers, as per the availability of the media in the remote areas of the study area. One research paper has also published from the data generated during the project.
To honour the most active participant whose work will help to obtain new information, multiplication and propagation of medicinal plants.			√	The active participants in the programme are honoured by giving them mementos inscribed with the name of programme and The Rufford Foundation, London.

2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

Off-season (winters): Field visits from November – March: During winter months the frequency of field visits was hampered because of the loss of road connectivity round the weeks to the hilly villages, however, whenever the road connectivity was maintained the visits were made in the study area.

Flooding in most of the areas caused devastation this year: This year heavy rainfall caused flooding during the first week of September, 2014. Therefore in September, 2014 no field visit was made in the study area.

3. Briefly describe the three most important outcomes of your project.

- Documentation of the natural habitats of medicinal plants.
- Ethnobotanical database.
- Establishment of conservation cum demonstration plots.

4. Briefly describe the involvement of local communities and how they have benefitted from the project (if relevant).

Local people at student, villager and farmer level were fully involved in the programme and a message of the cultivation of medicinal and aromatic plants has been flashed for the direct benefits, this will reduce the pressure on the wild medicinal plants and the species will multiply naturally in nature.

Local non-government organisation like The Himalayan Ecological and Conservation Research Foundation, National Institute of Training and Consultancy, Attitude Change International were also involved in the programme. These NGOs are motivated for the cultivation of medicinal and aromatic plants for the conservation and have started their own programmes. The brainstorming discussions with the members of these NGOs has resulted some viable project proposal on the cultivation and conservation of medicinal and plants which submitted to the Government of India for funding.

5. Are there any plans to continue this work?

After this awareness programme and establishment of demonstration plots in the study area the next phase will be training of the progressive formers and cultivation of medicinal and aromatic plants by progressive formers for commercial purpose.

6. How do you plan to share the results of your work with others?

An attempt has already been made where brainstorming discussion where done with local NGOs and one scientific paper has been published in Journal of Ethnopharmacology also. This will circulate the results of the project among the international strata of the conservation biologists. In near future more papers will be communicated for publication. The recommendations generated from the project will be communicated to the general public using newspaper.

Publication out of the project

Dutt HC, Bhagat N, Pandita S. (2015). Oral traditional knowledge on medicinal plants in jeopardy among Gaddi shepherds in hills of Northwestern Himalaya, J&K, India. Journal of Ethnopharmacology.168 (337-348). ISSN: 0378-8741 (Impact Factor 2.9). doi:10.1016/j.jep.2015.03.076

7. Timescale: Over what period was The Rufford Foundation grant used? How does this compare to the anticipated or actual length of the project?

Initially the project grant was supposed to fulfil all the requirements of the project, but in travel some more funds was required. To meet this requirement a sum of £90 was funded by The Himalayan Ecological and Conservation Research Foundation.

8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in £ sterling, indicating the local exchange rate used.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Travel/ conveyance	1500	1590	90	Difference of £ 90 was provided by HECRF
Food and stay	1000	1000	nil	
Field assistant (manpower)	1500	1500	Nil	
Photographic camera with Accessories	600	600	Nil	
Stationary and Printing of resource material	500	510	10	Difference of £ 10 was granted by HECRF
GPS	300	300	Nil	
Camcorder	250	250	Nil	
Printing of Report	150	150	Nil	
Contingency	200	200	Nil	
Total	6000	6100	100	

9. Looking ahead, what do you feel are the important next steps?

Cultivation of medicinal plants of industrial importance.

10. Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the RSGF receive any publicity during the course of your work?

- Logo of The Rufford Foundation was used on the resource material (cards, charts, calendars) distributed among the stakeholders.
- Logo of The Rufford Foundation was also used on the awards and mementos given to the students, schools and authorities.
- News items of each programmed in local newspaper was the main source of publicity among the general public of the state.

11. Any other comments?

The Rufford Foundation grant was important step and accepted most of the public in the state. The data generated during the field visits was used to earn one publication in Journal of Ethnopharmacology.

Table1: List of medicinal plants in all the four districts of the study

S. No.	Doda	Kishtwar	Poonch	Rajouri
1.	<i>Acalypha brachystachya</i> Family : Euphorbiaceae	<i>Acalypha brachystachya</i> Family : Euphorbiaceae	<i>Achillea millefolium</i> Family : Asteraceae	<i>Achillea millefolium</i> Family : Asteraceae
2.	<i>Achillea millefolium</i> Family : Asteraceae	<i>Achillea millefolium</i> Family : Asteraceae	<i>Achyranthes bidentata</i> Family : Amaranthaceae	<i>Achyranthes bidentata</i> Family : Amaranthaceae
3.	<i>Achyranthes bidentata</i> Family : Amaranthaceae	<i>Aconitum heterophyllum</i> Family : Ranunculaceae	<i>Aconitum heterophyllum</i> Family : Ranunculaceae	<i>Aconitum heterophyllum</i> Family : Ranunculaceae
4.	<i>Aconitum ferox</i> Family : Ranunculaceae	<i>Acorus calamus</i> Family : Acoraceae	<i>Acorus calamus</i> Family : Acoraceae	<i>Acorus calamus</i> Family : Acoraceae
5.	<i>Aconitum heterophyllum</i> Family : Ranunculaceae	<i>Adonis aestivalis</i> Family : Ranunculaceae	<i>Adonis aestivalis</i> Family : Ranunculaceae	<i>Agropyron repens</i> Family : Poaceae
6.	<i>Aconitum hookeri</i> Family : Ranunculaceae	<i>Aesculus indica</i> Family : Sapindaceae	<i>Agropyron repens</i> Family : Poaceae	<i>Aesculus indica</i> Family : Sapindaceae
7.	<i>Acorus calamus</i> Family : Acoraceae	<i>Agropyron repens</i> Family : Poaceae	<i>Ajuga parviflora</i> Family : Lamiaceae	<i>Ajuga parviflora</i> Family : Lamiaceae
8.	<i>Adonis aestivalis</i> Family : Ranunculaceae	<i>Ainsliaea latifolia</i> Family : Asteraceae	<i>Allium roylei</i> Family : Liliaceae	<i>Anethum sowa</i> Family : Apiaceae
9.	<i>Aesculus indica</i> Family : Sapindaceae	<i>Ajuga parviflora</i> Family : Lamiaceae	<i>Anagallis arvensis</i> Family : Primulaceae	<i>Arisaema jacquemontii</i> Family : Araceae
10.	<i>Agropyron repens</i> Family : Poaceae	<i>Anagallis arvensis</i> Family : Primulaceae	<i>Anemone obtusiloba</i> Family : Ranunculaceae	<i>Artemisia scoparia</i> Family : Asteraceae
11.	<i>Ainsliaea latifolia</i> Family : Asteraceae	<i>Anemone obtusiloba</i> Family : Ranunculaceae	<i>Anethum sowa</i> Family : Apiaceae	<i>Berberis lyceum</i> Family : Berberidaceae
12.	<i>Ajuga parviflora</i> Family : Lamiaceae	<i>Anemone tetrasepala</i> Family : Ranunculaceae	<i>Arisaema jacquemontii</i> Family : Araceae	<i>Bergenia ciliata</i> Family : Saxifragaceae

13	<i>Allium roylei</i> Family : Liliaceae	<i>Anethum sowa</i> Family :Apiaceae	<i>Artemisia maritima</i> Family :Asteraceae	<i>Bistorta amplexicaulis</i> Family : Polygonaceae
14	<i>Anagallis arvensis</i> Family : Primulaceae	<i>Arisaema jacquemontii</i> Family :Araceae	<i>Artemisia scoparia</i> Family :Asteraceae	<i>Cichorium intybus</i> Family : Asteraceae
15	<i>Anemone obtusiloba</i> Family : Ranunculaceae	<i>Artemisia maritima</i> Family :Asteraceae	<i>Berberis lyceum</i> Family :Berberidaceae	<i>Cardamine impatiens</i> Family : Brassicaceae
16	<i>Anemone tetrasepala</i> Family : Ranunculaceae	<i>Artemisia scoparia</i> Family :Asteraceae	<i>Bergenia ciliata</i> Family :Saxifragaceae	<i>Cannabis sativa</i> Family : Cannabaceae
17	<i>Anethum sowa</i> Family :Apiaceae	<i>Arundo donax</i> Family :Poaceae	<i>Bergenia legulata</i> Family :Saxifragaceae	<i>Caltha palustris</i> Family : Ranunculaceae
18	<i>Arisaema jacquemontii</i> Family :Araceae	<i>Atropa acuminata</i> Family :Solanaceae	<i>Bidens pilosa</i> Family : Asteraceae	<i>Commelina benghalensis</i> L. Family : Commelinaceae
19	<i>Artemisia scoparia</i> Family :Asteraceae	<i>Berberis lyceum</i> Family :Berberidaceae	<i>Bistorta amplexicaulis</i> Family : Polygonaceae	<i>Datura stramonium</i> Family : Solanaceae
20	<i>Arundo donax</i> Family :Poaceae	<i>Bergenia ciliata</i> Family :Saxifragaceae	<i>Bromus patulus</i> Family : Poaceae	<i>Clematis montana</i> Family : Asteraceae
21	<i>Atropa acuminata</i> Family :Solanaceae	<i>Betula utilis</i> Family : Betulaceae	<i>Bupleurum falcatum</i> Family : Apiaceae	<i>Desmodium polycarpon</i> Family : Fabaceae
22	<i>Berberis lyceum</i> Family :Berberidaceae	<i>Bidens pilosa</i> Family : Asteraceae	<i>Buxus wallichina</i> Family: Buxaceae	<i>Corydalis govaniiana</i> Family : Fumariaceae
23	<i>Bergenia ciliata</i> Family :Saxifragaceae	<i>Bistorta amplexicaulis</i> Family : Polygonaceae	<i>Cannabis sativa</i> Family : Cannabaceae	<i>Dioscorea deltoidea</i> Family : Dioscoreaceae
24	<i>Bistorta amplexicaulis</i> Family : Polygonaceae	<i>Bromus patulus</i> Family : Poaceae	<i>Capsella bursa – pastoris</i> Family : Brassicaceae	<i>Duchesnea indica</i> Family : Rosaceae
25	<i>Bromus patulus</i> Family : Poaceae	<i>Bunium persicum</i> Family : Apiaceae	<i>Caralluma tuberculata</i> Family: Ascalpidaceae	<i>Eleagnus umbellata</i> Family: Elleaganaceae
26	<i>Bupleurum falcatum</i>	<i>Bupleurum falcatum</i>	<i>Carpesium abrotanoides</i>	<i>Daphne oleoides</i>

	Family : Apiaceae	Family : Apiaceae	Family : Asteraceae	Family : Thymelaeaceae
27	<i>Caltha palustris</i> Family : Ranunculaceae	<i>Bupleurum longicaule</i> Family : Apiaceae	<i>Cichorium intybus</i> Family : Asteraceae	<i>Euphorbia helioscopia</i> Family : Euphorbiaceae
28	<i>Cannabis sativa</i> Family : Cannabaceae	<i>Cannabis sativa</i> Family : Cannabaceae	<i>Clematis montana</i> Family : Asteraceae	<i>Fumaria parviflora</i> Family : Fumariaceae
29	<i>Capsella bursa – pastoris</i> Family : Brassicaceae	<i>Capsella bursa – pastoris</i> Family : Brassicaceae	<i>Clinopodium vulgare</i> Family : Lamiaceae	<i>Digitalis purpurea</i> Family : Scrophulariaceae
30	<i>Carpesium abrotanoides</i> Family : Asteraceae	<i>Cardamine impatiens</i> Family : Brassicaceae	<i>Commelina benghalensis</i> L. Family : Commelinaceae	<i>Galium aparine</i> Family : Rubiaceae
31	<i>Cassiope fastigiata</i> Family : Ericaceae	<i>Celtis australis</i> Family : Ulmaceae	<i>Corydalis rutifolia</i> Sibth. Family : Fumariaceae	<i>Gentiana argentea</i> Family : Gentianaceae
32	<i>Celtis australis</i> L. Family : Ulmaceae	<i>Cichorium intybus</i> Family : Asteraceae	<i>Daphne oleoides</i> Family : Thymelaeaceae	<i>Geranium nepalense</i> Family : Geraniaceae
33	<i>Cichorium intybus</i> Family : Asteraceae	<i>Clematis montana</i> Family : Asteraceae	<i>Datura stramonium</i> Family : Solanaceae	<i>Hydrocotyle javanica</i> Family : Apiaceae
34	<i>Clematis montana</i> Family : Asteraceae	<i>Clinopodium vulgare</i> Family : Lamiaceae	<i>Delphinium roylei</i> Family : Ranunculaceae	<i>Hedera nepalensis</i> Family : Araliaceae
35	<i>Codonopsis ovata</i> Benth. Family : Campanulaceae	<i>Codonopsis ovata</i> Family : Campanulaceae	<i>Desmodium polycarpon</i> Family : Fabaceae	<i>Girardinia heterophylla</i> Family : Urticaceae
36	<i>Colchicum luteum</i> Family : Liliaceae	<i>Commelina benghalensis</i> Family : Commelinaceae	<i>Digitalis purpurea</i> Family : Scrophulariaceae	<i>Indigofera heterantha</i> Family : Papilionaceae
37	<i>Corydalis gowaniana</i> Family : Fumariaceae	<i>Corydalis rutifolia</i> Family : Fumariaceae	<i>Dioscorea deltoidea</i> Family : Dioscoreaceae	<i>Ipomoea pilosa</i> Family : Convolvulaceae
38	<i>Corydalis thyrsoiflora</i> Prain. Family : Fumariaceae	<i>Corydalis thyrsoiflora</i> Family : Fumariaceae	<i>Duchesnea indica</i> Family : Rosaceae	<i>Iris kemaonensis</i> Family : Iridaceae
39	<i>Cynoglossum micranthum</i> Family : Boraginaceae	<i>Cynoglossum micranthum</i> Family : Boraginaceae	<i>Eleagnus umbellata</i> Family : Elaeagnaceae	<i>Justicia adhatoda</i> Family : Acanthaceae

40	<i>Daphne oleoides</i> Family : Thymelaeaceae	<i>Datura stramonium</i> Family : Solanaceae	<i>Erigeron canadensis</i> Family : Asteraceae	<i>Geranium wallichianum</i> Family :Geraniaceae
41	<i>Datura stramonium</i> Family : Solanaceae	<i>Delphinium roylei</i> Family : Ranunculaceae	<i>Euphorbia helioscopia</i> Family : Euphorbiaceae	<i>Leontopodium himalayanum</i> Family : Asteraceae
42	<i>Delphinium vestitum</i> Family : Ranunculaceae	<i>Delphinium vestitum</i> Family : Ranunculaceae	<i>Euphorbia pilosa</i> Family : Euphorbiaceae	<i>Mentha longifolia</i> Family : Lamiaceae
43	<i>Desmodium podocarpum</i> Family : Fabaceae	<i>Desmodium polycarpon</i> Family : Fabaceae	<i>Fagopyrum esculentum</i> Family : Polygonaceae	<i>Micromeria biflora</i> Family : Lamiaceae
44	<i>Desmodium tiliaefolium</i> Family : Fabaceae	<i>Desmodium tiliaefolium</i> Family : Fabaceae	<i>Ficus palmata</i> Family : Moraceae	<i>Heracleum candicans</i> Family : Apiaceae
45	<i>Digitalis lanata</i> Family : Scrophulariaceae	<i>Digitalis purpurea</i> Family : Scrophulariaceae	<i>Fumaria parviflora</i> Family : Fumariaceae	<i>Morina longifolia</i> Family : Morinaceae
46	<i>Digitalis purpurea</i> Family : Scrophulariaceae	<i>Dioscorea deltoidea</i> Family : Dioscoreaceae	<i>Galium aparine</i> Family : Rubiaceae	<i>Nasturtium officinale</i> Family : Brassicaceae
47	<i>Dioscorea deltoidea</i> Family : Dioscoreaceae	<i>Duchesnea indica</i> Family : Rosaceae	<i>Galium rotundifolium</i> Family : Rubiaceae	<i>Oxalis corniculata</i> Family : Oxalidaceae
48	<i>Duchesnea indica</i> Family : Rosaceae	<i>Erigeron canadensis</i> Family : Asteraceae	<i>Galium tenuissimum</i> Family : Rubiaceae	<i>Pistacia integerrima</i> Family : Anacardiaceae
49	<i>Erigeron canadensis</i> Family : Asteraceae	<i>Erodium cicutarium</i> Family : Geraniaceae	<i>Gentiana argentea</i> Family : Gentianaceae	<i>Phytolacca acinosa</i> Family : Phytolaccaceae
50	<i>Erodium cicutarium</i> Family : Geraniaceae	<i>Euphorbia helioscopia</i> Family : Euphorbiaceae	<i>Geranium nepalense</i> Family :Geraniaceae	<i>Polygonum glabrum</i> Family : Polygonaceae
51	<i>Euphorbia helioscopia</i> Family : Euphorbiaceae	<i>Euphorbia pilosa</i> Family : Euphorbiaceae	<i>Geum roylei</i> Family : Rosaceae	<i>Melia azadirachta</i> Family : Meliaceae
52	<i>Euphorbia pilosa</i> Family : Euphorbiaceae	<i>Euphrasia officinalis</i> L. Family : Scrophulariaceae	<i>Girardinia heterophylla</i> Family : Urticaceae	<i>Prinsepia utilis</i> Family : Rosaceae
53	<i>Euphrasia officinalis</i> Family : Scrophulariaceae	<i>Fagopyrum cymosum</i> Family : Polygonaceae	<i>Gnaphalium luteo-album</i> Family : Asteraceae	<i>Prunella vulgaris</i> Family : Lamiaceae

54	<i>Fagopyrum cymosum</i> Family : Polygonaceae	<i>Fagopyrum esculentum</i> Family : Polygonaceae	<i>Hedera nepalensis</i> Family : Araliaceae	<i>Punica granatum</i> Family : Punicaceae
55	<i>Fagopyrum esculentum</i> Family : Polygonaceae	<i>Ferula jaeskiana</i> Family: Apiaceae	<i>Heracleum candicans</i> Family : Apiaceae	<i>Ranunculus arvensis</i> Family : Ranunculaceae
56	<i>Ficus palmata</i> Family : Moraceae	<i>Ficus palmata</i> Family : Moraceae	<i>Hydrocotyle javanica</i> Family : Apiaceae	<i>Rhododendron arboreum</i> Family : Ericaceae
57	<i>Fragaria vesca</i> Family : Rosaceae	<i>Fragaria vesca</i> Family : Rosaceae	<i>Impatiens roylei</i> Family : Balsaminaceae	<i>Robinia pseudo-acacia</i> Family : Fabaceae
58	<i>Fritillaria roylei</i> Family : Liliaceae	<i>Fumaria parviflora</i> Family : Fumariaceae	<i>Indigofera heterantha</i> Family : Papilionaceae	<i>Rorippa islandica</i> Family : Brassicaceae
59	<i>Fumaria parviflora</i> Family : Fumariaceae	<i>Galium aparine</i> Family : Rubiaceae	<i>Ipomoea nil</i> Family : Convolvulaceae	<i>Rubia cardifolia</i> Family : Rubiaceae
60	<i>Galium aparine</i> Family : Rubiaceae	<i>Galium rotundifolium</i> Family : Rubiaceae	<i>Ipomoea pilosa</i> Family : Convolvulaceae	<i>Rumex hastatus</i> Family : Polygonaceae
61	<i>Gentiana argentea</i> Family : Gentianaceae	<i>Galium tenuissimum</i> Family : Rubiaceae	<i>Iris kemaonensis</i> Family : Iridaceae	<i>Potentilla argyrophylla</i> Family : Rosaceae
62	<i>Geranium nepalense</i> Family : Geraniaceae	<i>Gentiana argentea</i> Family : Gentianaceae	<i>Juglans regia</i> Family : Juglandaceae	<i>Saussurea heteromalla</i> Family : Asteraceae
63	<i>Geranium wallichianum</i> Family : Geraniaceae	<i>Gentiana kurroo</i> Family : Gentianaceae	<i>Juncus bufonius</i> Family : Juncaceae	<i>Senopodophyllum hexandrum</i> Family : Podophyllaceae
64	<i>Geum roylei</i> Family : Rosaceae	<i>Geranium nepalense</i> Family : Geraniaceae	<i>Justicia adhatoda</i> Family : Acanthaceae	<i>Solanum surrattense</i> Family : Solanaceae
65	<i>Girardinia heterophylla</i> Family : Urticaceae	<i>Geranium wallichianum</i> Family : Geraniaceae	<i>Leontopodium himalayanum</i> Family : Asteraceae	<i>Rehum emodi</i> Family : Polygonaceae
66	<i>Gnaphalium luteo-album</i> Family : Asteraceae	<i>Girardinia heterophylla</i> Family : Urticaceae	<i>Lonicera alpigena</i> Family : Caprifoliaceae	<i>Tagetus minuta</i> Family : Asteraceae
67	<i>Hedera nepalensis</i> Family : Araliaceae	<i>Gnaphalium luteo-album</i> Family : Asteraceae	<i>Mariscus sieberianus</i> Family : Cyperaceae	<i>Tanacetum longifolium</i> Family : Asteraceae

68	<i>Heracleum candicans</i> Family : Apiaceae	<i>Hedera nepalensis</i> Family : Araliaceae	<i>Melia azadirachta</i> Family : Meliaceae	<i>Taraxacum officinale</i> Family : Asteraceae
69	<i>Hyoscyamus niger</i> Family : Solanaceae	<i>Heracleum candicans</i> Family : Apiaceae	<i>Mentha longifolia</i> Family : Lamiaceae	<i>Trachyspermum ammi</i> Family : Apiaceae
70	<i>Hypericum perforatum</i> Family : Hypericaceae	<i>Hydrocotyle javanica</i> Family : Apiaceae	<i>Micromeria biflora</i> Family : Lamiaceae	<i>Trifolium repens</i> Family : Fabaceae
71	<i>Impatiens roylei</i> Family : Balsaminaceae	<i>Hyoscyamus niger</i> Family : Solanaceae	<i>Morina longifolia</i> Family : Morinaceae	<i>Tulipa stellata</i> Family : Liliaceae
72	<i>Indigofera heterantha</i> Family : Papilionaceae	<i>Hypericum perforatum</i> Family : Hypericaceae	<i>Nasturtium officinale</i> Family : Brassicaceae	<i>Urtica dioica</i> Family : Urticaceae
73	<i>Ipomoea nil</i> Family : Convolvulaceae	<i>Impatiens roylei</i> Family : Balsaminaceae	<i>Nepeta elliptica</i> Family : Lamiaceae	<i>Valeriana pyrolifolia</i> Family : Valerianaceae
74	<i>Ipomoea pilosa</i> Family : Convolvulaceae	<i>Indigofera heterantha</i> Family : Papilionaceae	<i>Nerium indicum</i> Family : Apocynaceae	<i>Verbascum thapsus</i> Family : Scrophulariaceae
75	<i>Iris kemaonensis</i> Family : Iridaceae	<i>Inula royleana</i> Family : Asteraceae	<i>Olea ferruginea</i> Family : Oleaceae	<i>Viola canescens</i> Family : Violaceae
76	<i>Juglans regia</i> Family : Juglandaceae	<i>Ipomoea nil</i> Family : Convolvulaceae	<i>Origanum normale</i> Family : Lamiaceae	<i>Viscum album</i> Family : Viscaceae
77	<i>Jurinea macrocephala</i> Family : Asteraceae	<i>Ipomoea pilosa</i> Family : Convolvulaceae	<i>Oxalis corniculata</i> Family : Oxalidaceae	<i>Vitex negundo</i> Family : Verbenaceae
78	<i>Justicia adhatoda</i> Family : Acanthaceae	<i>Iris kemaonensis</i> Family : Iridaceae	<i>Pergularia daemia</i> Family : Asclepiadaceae	<i>Withania somnifera</i> Family : Solanaceae
79	<i>Leontopodium himalayanum</i> Family : Asteraceae	<i>Juglans regia</i> Family : Juglandaceae	<i>Phytolacca acinosa</i> Family : Phytolaccaceae	<i>Xanthium strumarium</i> Family : Asteraceae
80	<i>Lithospermum arvense</i> Family : Boraginaceae	<i>Juncus bufonius</i> Family : Juncaceae	<i>Pistacia integerrima</i> Family : Anacardiaceae	<i>Zanthoxylum alatum</i> Family : Rutaceae
81	<i>Lonicera alpigena</i> Family : Caprifoliaceae	<i>Jurinea macrocephala</i> Family : Asteraceae	<i>Plantago lanceolata</i> Family : Plantaginaceae	-

82	<i>Macrotomia benthamii</i> Family : Boraginaceae	<i>Leontopodium himalayanum</i> Family : Asteraceae	<i>Plantago major</i> Family : Plantaginaceae	-
83	<i>Meconopsis aculeata</i> Family : Papaveraceae	<i>Lithospermum arvense</i> Family : Boraginaceae	<i>Pleurospermum brunonis</i> Family : Apiaceae	-
84	<i>Melia azadirachta</i> Family : Meliaceae	<i>Lonicera alpigena</i> Family : Caprifoliaceae	<i>Polemonium caeruleum</i> Family : Polemoniaceae	-
85	<i>Mentha longifolia</i> Family : Lamiaceae	<i>Macrotomia benthamii</i> Family : Boraginaceae	<i>Polygala abyssinica</i> Family : Polygalaceae	-
86	<i>Micromeria biflora</i> Family : Lamiaceae	<i>Mariscus sieberianus</i> Family : Cyperaceae	<i>Polygonum glabrum</i> Family : Polygonaceae	-
87	<i>Mollugo pentaphylla</i> Family : Aizoaceae	<i>Melia azadirachta</i> Family : Meliaceae	<i>Polygonum nepalense</i> Family : Polygonaceae	-
88	<i>Morina longifolia</i> Family : Morinaceae	<i>Mentha longifolia</i> Family : Lamiaceae	<i>Populus ciliata</i> Family : Salicaceae	-
89	<i>Nasturtium officinale</i> Family : Brassicaceae	<i>Micromeria biflora</i> Family : Lamiaceae	<i>Prinsepia utilis</i> Family : Rosaceae	-
90	<i>Nepeta elliptica</i> Family : Lamiaceae	<i>Mollugo pentaphylla</i> Family : Aizoaceae	<i>Prunella vulgaris</i> Family : Lamiaceae	-
91	<i>Nerium indicum</i> Family : Apocynaceae	<i>Nasturtium officinale</i> Family : Brassicaceae	<i>Punica granatum</i> Family : Punicaceae	-
92	<i>Olea ferruginea</i> Family : Oleaceae	<i>Nepeta elliptica</i> Family : Lamiaceae	<i>Rabdosia rugosa</i> Family : Lamiaceae	-
93	<i>Oxalis corniculata</i> Family : Oxalidaceae	<i>Olea ferruginea</i> Family : Oleaceae	<i>Ranunculus arvensis</i> Family : Ranunculaceae	-
94	<i>Oxyria digyna</i> Family : Polygonaceae	<i>Origanum normale</i> Family : Lamiaceae	<i>Rhododendron arboreum</i> Family : Ericaceae	-
95	<i>Pedicularis pectinata</i> Family : Scrophulariaceae	<i>Oxalis corniculata</i> Family : Oxalidaceae	<i>Rhododendron campanulatum</i> Family : Ericaceae	-

96	<i>Phytolacca acinosa</i> Family : Phytolaccaceae	<i>Oxyria digyna</i> Family : Polygonaceae	<i>Robinia pseudo-acacia</i> Family : Fabaceae	-
97	<i>Pistacia integerrima</i> Family : Anacardiaceae	<i>Picrorhiza kurrooa</i> Family : Scrophuriaceae	<i>Rorippa indica</i> Family : Brassicaceae	-
98	<i>Plantago lanceolata</i> Family : Plantaginaceae	<i>Phytolacca acinosa</i> Family : Phytolaccaceae	<i>Rorippa islandica</i> Family : Brassicaceae	-
99	<i>Pleurospermum brunonis</i> Family : Apiaceae	<i>Pistacia integerrima</i> Family : Anacardiaceae	<i>Rosa brunonii</i> Family : Rosaceae	-
10	<i>Polemonium caeruleum</i> Family : Polemoniaceae	<i>Plantago lanceolata</i> Family : Plantaginaceae	<i>Rosa macrophylla</i> Family : Rosaceae	-
10	<i>Polygala abyssinica</i> Family : Polygalaceae	<i>Plantago major</i> Family : Plantaginaceae	<i>Rubia cardifolia</i> Family : Rubiaceae	-
10	<i>Polygonum glabrum</i> Family : Polygonaceae	<i>Polemonium caeruleum</i> Family : Polemoniaceae	<i>Rubus niveus</i> Family : Rubiaceae	-
10	<i>Polygonum nepalense</i> Family : Polygonaceae	<i>Polygala abyssinica</i> Family : Polygalaceae	<i>Rumex hastatus</i> Family : Polygonaceae	-
10	<i>Populus ciliata</i> Family : Salicaceae	<i>Polygonum glabrum</i> Family : Polygonaceae	<i>Rumex nepalensis</i> Family : Polygonaceae	-
10	<i>Potentilla argrophylla</i> Family : Rosaceae	<i>Polygonum nepalense</i> Family : Polygonaceae	<i>Salvia moorcroftiana</i> Family : Lamiaceae	-
10	<i>Primula denticulata</i> Family : Primulaceae	<i>Populus ciliata</i> Family : Salicaceae	<i>Sauromatum guttatum</i> Family : Araceae	-
10	<i>Prinsepia utilis</i> Family : Rosaceae	<i>Potentilla argrophylla</i> Family : Rosaceae	<i>Saussurea heteromalla</i> Family : Asteraceae	-
10	<i>Prunella vulgaris</i> Family : Lamiaceae	<i>Potentilla nepalensis</i> Family : Rosaceae	<i>Sedum ewersii</i> Family : Crassulaceae	-
10	<i>Punica granatum</i> Family : Punicaceae	<i>Primula denticulata</i> Family : Primulaceae	<i>Senopodophyllum hexandrum</i> Family : Podophyllaceae	-

11	<i>Rabdosia rugosa</i> Family : Lamiaceae	<i>Prinsepia utilis</i> Family : Rosaceae	<i>Sisymbrium irio</i> Family : Brassicaceae	-
11	<i>Ranunculus aquatilis</i> Family : Ranunculaceae	<i>Prunella vulgaris</i> Family : Lamiaceae	<i>Solanum nigrum</i> Family : Solanaceae	-
11	<i>Ranunculus arvensis</i> Family : Ranunculaceae	<i>Punica granatum</i> Family : Punicaceae	<i>Solanum pseudo-capsicum</i> Family : Solanaceae	-
11	<i>Rhododendron campanulatum</i> Family : Ericaceae	<i>Rabdosia rugosa</i> Family : Lamiaceae	<i>Solanum surrattense</i> Family : Solanaceae	-
11	<i>Rhus succedanea</i> Family : Anacardiaceae	<i>Ranunculus arvensis</i> L. Family : Ranunculaceae	<i>Solidago virga-aurea.</i> Family : Asteraceae	-
11	<i>Robinia pseudo-acacia</i> Family : Fabaceae	<i>Rehum emodi</i> Family : Polygonaceae	<i>Spiraea canescens</i> Family : Rosaceae	-
11	<i>Rorippa indica</i> Family : Brassicaceae	<i>Rhododendron campanulatum</i> Family : Ericaceae	<i>Spiraea sorbifolia</i> Family : Rosaceae	-
11	<i>Rosa brunonii</i> Family : Rosaceae	<i>Robinia pseudo-acacia</i> L. Family : Fabaceae	<i>Stachys sericea</i> Family : Lamiaceae	-
11	<i>Rosa macrophylla</i> Family : Rosaceae	<i>Rorippa indica</i> Family : Brassicaceae	<i>Stellaria aquatica</i> Family : Caryophyllaceae	-
11	<i>Rubia cardifolia</i> Family : Rubiaceae	<i>Rorippa islandica</i> Family : Brassicaceae	<i>Symplocos crataegoides</i> Family : Symplocaceae	-
12	<i>Rumex hastatus</i> Family : Polygonaceae	<i>Rosa brunonii</i> Family : Rosaceae	<i>Tagetes minuta</i> Family : Asteraceae	-
12	<i>Rumex nepalensis</i> Family : Polygonaceae	<i>Rosa webbiana</i> Family : Rosaceae	<i>Tanacetum longifolium</i> Family : Asteraceae	-
12	<i>Salvia lanata</i> Family : Lamiaceae	<i>Rubia cardifolia</i> Family : Rubiaceae	<i>Taraxacum officinale</i> Family : Asteraceae	-
12	<i>Salvia moorcroftiana</i> Family : Lamiaceae	<i>Rubus niveus</i> Family : Rubiaceae	<i>Trachyspermum ammi</i> Family : Apiaceae	-

12	<i>Sauromatum guttatum</i> Family : Araceae	<i>Rumex hastatus</i> Family : Polygonaceae	<i>Trifolium repens</i> Family : Fabaceae	-
12	<i>Saussurea heteromalla</i> Family : Asteraceae	<i>Rumex nepalensis</i> Family : Polygonaceae	<i>Tulipa stellata</i> Family : Liliaceae	-
12	<i>Sedum ewersii</i> Family : Crassulaceae	<i>Salvia lanata</i> Family : Lamiaceae	<i>Urtica dioica</i> Family : Urticaceae	-
12	<i>Selinum vaginatum</i> . Family : Apiaceae	<i>Salvia moorcroftiana</i> Family : Lamiaceae	<i>Valeriana pyrolifolia</i> Family : Valerianaceae	-
12	<i>Senopodophyllum hexandrum</i> Family : Podophyllaceae	<i>Sauromatum guttatum</i> Family : Araceae	<i>Verbascum thapsus</i> Family : Scrophulariaceae	-
12	<i>Silene conoidea</i> Family : Caryophyllaceae	<i>Saussurea costus</i> Family : Asteraceae	<i>Viburnum grandiflorum</i> Family : Caprifoliaceae	-
13	<i>Sium latijugum</i> Family : Apiaceae	<i>Saussurea heteromalla</i> Family : Asteraceae	<i>Viola canescens</i> Family : Violaceae	-
13	<i>Solanum nigrum</i> Family : Solanaceae	<i>Sedum ewersii</i> Family : Crassulaceae	<i>Viola patrinii</i> Family : Violaceae	-
13	<i>Solanum pseudo-capsicum</i> Family : Solanaceae	<i>Selinum vaginatum</i> Family : Apiaceae	<i>Viola serpens</i> Family : Violaceae	-
13	<i>Solanum surrattense</i> Family : Solanaceae	<i>Senopodophyllum hexandrum</i> Family : Podophyllaceae	<i>Viscum album</i> Family : Viscaceae	-
13	<i>Spiraea canescens</i> Family : Rosaceae	<i>Silene conoidea</i> Family : Caryophyllaceae	<i>Vitex negundo</i> Family : Verbenaceae	-
13	<i>Stachys sericea</i> Family : Lamiaceae	<i>Sisymbrium irio</i> Family : Brassicaceae	<i>Withania somnifera</i> Family : Solanaceae	-
13	<i>Stellaria aquatica</i> Family : Caryophyllaceae	<i>Sium latijugum</i> Family : Apiaceae	<i>Xanthium strumarium</i> Family : Asteraceae	-
13	<i>Symplocos crataegoides</i> Family : Symplocaceae	<i>Solanum nigrum</i> Family : Solanaceae	<i>Zanthoxylum alatum</i> Family : Rutaceae	-

13	<i>Tagetes minuta</i> Family : Asteraceae	<i>Solanum pseudo-capsicum</i> Family : Solanaceae	-	-
13	<i>Tanacetum longifolium</i> Family : Asteraceae	<i>Solanum surrattense</i> Family : Solanaceae	-	-
14	<i>Taraxacum officinale</i> Family : Asteraceae	<i>Spiraea canescens</i> Family : Rosaceae	-	-
14	<i>Taxus baccata</i> Family : Taxaceae	<i>Stellaria aquatica</i> Family : Caryophyllaceae	-	-
14	<i>Thymus serpyllum</i> Family : Lamiaceae	<i>Symplocos crataegoides</i> Family : Symplocaceae	-	-
14	<i>Trachyspermum ammi</i> Family : Apiaceae	<i>Tagetes minuta</i> Family : Asteraceae	-	-
14	<i>Trifolium repens</i> Family : Fabaceae	<i>Tanacetum longifolium</i> Family : Asteraceae	-	-
14	<i>Trillium govanianum</i> Family : Liliaceae	<i>Taraxacum officinale</i> Family : Asteraceae	-	-
14	<i>Tulipa stellata</i> Family : Liliaceae	<i>Thymus serpyllum</i> Family : Lamiaceae	-	-
14	<i>Urtica dioica</i> Family : Urticaceae	<i>Trachyspermum ammi</i> Family : Apiaceae	-	-
14	<i>Valeriana pyrolifolia</i> Family : Valerianaceae	<i>Trifolium repens</i> Family : Fabaceae	-	-
14	<i>Verbascum thapsus</i> Family : Scrophulariaceae	<i>Trillium govanianum</i> Family : Liliaceae	-	-
15	<i>Viburnum grandiflorum</i> Family : Caprifoliaceae	<i>Tulipa stellata</i> Hook. Family : Liliaceae	-	-
15	<i>Viola canescens</i> Family : Violaceae	<i>Urtica dioica</i> Linn. Family : Urticaceae	-	-

15	<i>Viola odorata</i> Family : Violaceae	<i>Valeriana wallichii</i> Family : Valerianaceae	-	-
15	<i>Viola patrinii</i> Family : Violaceae	<i>Verbascum thapsus</i> Family : Scrophulariaceae	-	-
15	<i>Viscum album</i> Family : Viscaceae	<i>Viburnum grandiflorum</i> Family : Caprifoliaceae	-	-
15	<i>Viscum articulatum</i> Family : Viscaceae	<i>Viola canescens</i> Family : Violaceae	-	-
15	<i>Vitex negundo</i> Family : Verbenaceae	<i>Viola odorata</i> Family : Violaceae	-	-
15	<i>Withania somnifera</i> Family : Solanaceae	<i>Viola patrinii</i> Family : Violaceae	-	-
15	<i>Xanthium strumarium</i> Family : Asteraceae	<i>Viola serpens</i> Family : Violaceae	-	-
15	<i>Zanthoxylum alatum</i> Family : Rutaceae	<i>Viscum album</i> Family : Viscaceae	-	-
16	-	<i>Vitex negundo</i> Family : Verbenaceae	-	-
16	--	<i>Withania somnifera</i> Family : Solanaceae	-	-
16	-	<i>Xanthium strumarium</i> Family : Asteraceae	-	-
16	-	<i>Zanthoxylum alatum</i> Family : Rutaceae	-	-

Table 2: Plants of industrial importance and collected by locals from wild habitats

S. No.	Medicinal plants under heavy exploitation	Parts sold in market
1.	<i>Aconitum ferox</i>	Underground parts
2.	<i>Aconitum heterophyllum</i>	Underground parts
3.	<i>Allium roylei</i>	Underground parts
4.	<i>Atropa acuminata</i>	Leaves
5.	<i>Berberis lyceum</i>	Underground parts
6.	<i>Bunium persicum</i>	Fruits
7.	<i>Buxus wallichina</i>	Wood
8.	<i>Digitalis purpurea</i>	Leaves
9.	<i>Dioscorea deltoidea</i>	Underground parts
10.	<i>Jurinea macrocephala</i>	Underground parts
11.	<i>Micromeria biflora</i>	Leaves
12.	<i>Picrorhiza kurrooa</i>	Underground parts
13.	<i>Rhododendron campanulatum</i>	Flowers
14.	<i>Sassurea costus</i>	Underground parts
15.	<i>Taxus baccata</i>	Bark and leaves
16.	<i>Thymus serpyllum</i>	Leaves and flowers
17.	<i>Trillium govanianum</i>	Underground parts

18.	<i>Valeriana wallichii</i>	Underground parts
19.	<i>Viola odorata</i>	Flowers
20.	<i>Withania somnifera</i>	Underground parts
21.	<i>Zanthoxylum alatum</i>	Seeds and wood

Table 3: Plants used as source of food

S. No.	Plants under heavy exploitation	Parts as source of food
1.	<i>Acorus calamus</i>	Underground parts
2.	<i>Allium roylei</i>	Underground parts
3.	<i>Anethum sowa</i>	Seeds
4.	<i>Bistorta amplexicaulis</i>	Underground parts
5.	<i>Bunium persicum</i>	Seeds
6.	<i>Colchicum luteum</i>	Underground parts
7.	<i>Fagopyrum esculentum</i>	Leaves
8.	<i>Ferula jaeskiana</i>	Sap
9.	<i>Juglans regia</i>	Fruits
10.	<i>Mentha longifolia</i>	Leaves
11.	<i>Micromeria biflora</i>	Leaves
12.	<i>Oxalis corniculata</i>	Leaves

13.	<i>Phytolacca acinosa</i>	Leaves*
14.	<i>Rumex hastatus</i>	Leaves
15.	<i>Rhododendron campanulatum</i>	Flowers
16.	<i>Taraxacum officinale</i>	Underground parts
17.	<i>Taxus baccata</i>	Bark
18.	<i>Thymus serpyllum</i>	Leaves
19.	<i>Trachyspermum ammi</i>	Seeds
20.	<i>Urtica dioica</i>	Leaves**
21.	<i>Viola odorata</i>	Flowers
22.	<i>Zanthoxylum alatum</i>	Fruits and wood

* Leaves of plants with hollow stem are eaten as vegetables. Plants with solid stem are considered as deadly poisonous ** Leaves of young plant (2-3 weeks old) are eaten as vegetables

Table 4: Awareness workshops conducted in study area

Districts	Proposed workshops		Conducted workshops	
	Schools	Panchyat	Schools	Panchyat
Kishtwar	3	3	2	2
Doda	3	3	3	5
Rajouri	3	3	6	3
Poonch	3	3	3	4

Table 5: Awareness created in various schools, colleges and villages

	Doda		Kishtwar		Rajouri		Poonch	
	Schools	Village panchyat	Schools	Village panchyat	Schools	Village panchyat	Schools	
1.	Zenahari, Thathri	Benjlla and Sankhoja Bhadarwah	Sarthal, Kishtwar	Sarthal, Kishtwar	Higher Secondary Schools Darhal	Sarotha	Higher Secondary Schools Darhal	Bharmagala
2.	Matholla, Bhadarwah	Hanga and Dhara Bhadarwah	Gulabgarh Padder	Gulabgarh, Padder	Sher-e-Kashmir Higher Secondary,	Chowkian	Middle School, Bharmgal	Chandimarh
3.	Panjgram, Bhalla	Malnai Bhalla	-	Donadi, Kishtwar	Govt. High School Nadian,	Dharal	Govt College Mendhar	Surankot
4.	-	Danda, Bhalla	-	-	DPS Darhal,	-	-	Dharaba
5.	-	Malchoo, Bhadarwah	-	-	Eagle Public School,	-	-	-
6.	-	-	-	-	Sunshine High School,	-	-	--

Publication generated out of the project grant

Dutt HC, Bhagat N, Pandita S. (2015). **Oral traditional knowledge on medicinal plants in jeopardy among Gaddi shepherds in hills of Northwestern Himalaya, J&K, India.** Journal of Ethno-pharmacology.168 (337-348). ISSN: 0378-8741 (Impact Factor 2.9). doi:10.1016/j.jep.2015.03.076

SGP Small Grants Programme
UNDP
gef GLOBAL ENVIRONMENT FACILITY INVESTING IN OUR PLANET

Form 1
GEF SGP PROJECT PROPOSAL TEMPLATE

Project Title: Cultivation of Lavender and other Aromatic & Medicinal Herbs in hilly terraces of **Bhadarwah**.

1. APPLICANT

Name of Organization	National Industrial Training and Consultancy (NITCO)
Established	1994
Number of members	3 Members
Number of projects implemented	140
Mailing Address	National Industrial Training and Consultancy Arya Kanya Vidyalaya, Raj Tilak Road, Jammu Jammu and Kashmir - 180001 INDIA
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E-Mail	nitcojammu@vsnl.com
Principal Consultant (Name and Position)	Dr Harish C. Dutt, Subject Specialist
Project Contact/Manager	V.K Katal,



Part I: General Information

1. Project Title (should be focused not exceeding 15 words):- Dissemination of High Value & Low Volume MAPs Technology of IIMJ for socio-economic upliftment in Bhadarwah (J&K).

2. i. Name of PI: (NGO) Mr. Vinay Katal
ii. Name of Co-PI: (CSIR-IIM) Dr. Suresh Chandra

3. Name of organization & place: - National Industrial Training & Consultancy, Jammu & JAMMU

4. a. Type of organization:

Academic institution	--
Research organization S&T Council	--
Voluntary Organization	--
Panchayati Raj Institution (PRI)	--
Krishi Vigyan Kendra	--