



## The Rufford Small Grants Foundation Final Report

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

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. 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. 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](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

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| Grant Recipient Details |   |
|-------------------------|---|
| Your name               | Ripu m Kunwar   |
| Project title           | Documentation and conservation of indigenous medicinal plants and traditional knowledge in Far western Nepal          |
| RSG reference           | 18115-1   |
| Reporting period        | Sept 2016   |
| Amount of grant         | £4490   |
| Your email address      | <a href="mailto:ripukunwar@gmail.com">ripukunwar@gmail.com</a> , <a href="mailto:rkunwar@fau.edu">rkunwar@fau.edu</a> |
| Date of this report     | 30/09/2016  |

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  |
|---|--------------|--------------------|----------------|---|
| Produce a comprehensive database of medicinal flora of far western Nepal including the subsets of indigenous, threatened and declined/declining species and newly introduced ones |              |                    | Yes            | More information of database is given below. A total of 39 declining species and 40 introduced species are enumerated.  |
| Deposit the plant samples/specimens in KATH herbarium   |              |                    | Yes            | A letter from KATH is attached.   |
| Participatory mapping and inventory of IUCN threatened medicinal plant species  |              | Yes                |                | Report of distribution of these species is presented in fliers and distributed to local communities and organisations. Information from Darchula district was limited.                            |
| Develop and dispatch a booklet of each species consisting of precise and concise information about ecological functions, therapeutic roles, and conservation status.              |              |                    | Yes            | Both booklets (fliers) are attached below.  |
| Set local collaborations  |              |                    | Yes            | District Forest Office, Baitadi and DFO Dadeldhura helped consented us to co-work in research and management of subject species. DFO Baitadi consented to co-work in the future (attached below). |
| Assess the role of secondary resources (non-indigenous plants and second-growth forests or  |              |                    | Yes            | People are unwilling to go distant areas to collect the products in need. Thus,   |

|   |  |  |     |   |
|---|--|--|-----|---|
| habitats) in indigenous medicine systems amid the changes of climate, culture and communities of plants and people.   |  |  |     | nearby and human derived landscapes are frequently foraged regardless of quality. Out of 41 non-indigenous species reported to the area, 26 were being used in indigenous medicines, resulting in indigenous system mosaic. |
| Develop two manuscripts from the research and publish in international journals in order to outreach audiences and liaise the international collaborations. |  |  | Yes | Two manuscripts were developed and submitted to PLOS One and GIS/RS journal. The article in PLOS One is in final stage of publishing while the same in GIS/RS is still under review.  |

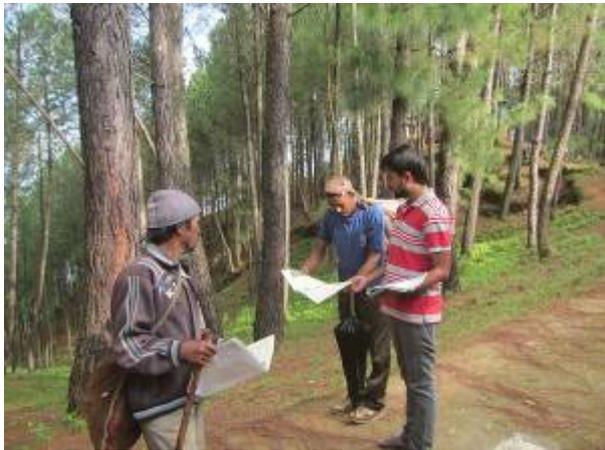
**2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).**

Field visit was scheduled in December 2015 which was a bit problematic in making full day (7 am to 7 pm) field visits. Power outage and load shedding were prevalent in study area. The field visit time was onerous due to Indian blockade thus the vehicle ride and frequent access to fields were limited. In order to combat the situation, one professor (Prof Dr Keshab Shrestha, Tribhuvan University) and two assistants (Razan Mahat and Asmita Thapa) were included as associates in study team.

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

\* Plant database of study area was developed and diversity and distribution of two subject species were enumerated. A total of 692 plants species were compiled from our three study districts. Some of the specimens were deposited in KATH herbarium. Their voucher codes, origin, distribution, taxonomy, vernacular names, uses, etc. were documented in database. Of them, two species *Paris polyphylla* and *Oroxylum indicum* were studied in greater detail and their distribution inside Nepal and study districts was mapped and presented in GIS maps.





\* Local collaborators were excited to see the database and plant origin and their conservation status. They were capacitated and local collaboration was developed. DFO Baitadi is willing to continue the project and extend throughout the district with application of GIS and Remote Sensing and participatory approaches. Detail density, diversity, and distribution records of the threatened species is always helpful in setting local priorities for conservation.







Local people considered this plant (*Daphniphyllum himalense*, Lalchandani) as threatened (Upper left), Local people call this plant as Saupate, considered as threatened (Upper middle), Local people found this plant (locally called as Aterno) as a new to the village (Upper right), Siddeshwor LSS, Hukkedada, Baitadi (Bottom left), Non-indigenous (invasive) species: *Erigeron karvinskianus* (Bottom upper right), *Ageratina adenophora* (Bottom lower right).





School programme in Baitadi (upper), Dadeldhura (middle) and discussion in Darchula (bottom)

##### **5. Are there any plans to continue this work?**

Great knowledge of indigenous management of subject species was catalogued. However the knowledge holder's in particular elderly people and traditional healers are in jeopardy amid the changes of climate, land-use, socioculture and biomedicalization. This is further plagued due to elderly people's unwillingness to fully and completely share what they regard as secret information. Therefore more participatory researches convincing local communities about the importance of indigenous knowledge to the future generation, focussing on GIS mapping and documentation and conserving indigenous species like *Paris polyphylla* and *Oroxylum indicum* and their associated knowledge would greatly extend the conservation education among community members and their children and outreach the larger communities.

Since I am doing PhD on ecology, ethnobotany and ethnography of Darchula and Baitadi districts, a further support is always helpful. In the further support, I would be more capable to uncover the detail indigenous knowledge of collection, use and management of indigenous species, pursue ecological research on density, diversity and distribution of these plants and develop sustainable conservation guidelines for future implications. In the changing contexts, development of the most updated guidelines considering all biological, ecological, indigenous and GIS related information of the threatened and indigenous species is imperative.

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

The findings of this study particularly the indigenous knowledge of collection, use, marketing, and management of these two subject species were greatly discussed with my colleagues and two manuscripts were prepared and submitted to publish in international high impact factor peer reviewed journals for broad dissemination.

I also have one robust plan of sharing my findings through a book chapter. I am funded by ICIMOD to publish a book of Kailash sacred landscape (the landscape covers my study districts). I am going to write a book chapter about the Useful Plants of Darchula and Baitadi districts, and I may use some of the data of this project. I do acknowledge RSGF in that paper.

#### 7. Timescale: Over what period was the RSG used? How does this compare to the anticipated or actual length of the project?

The anticipated schedule and the real time spent for the project were analogous. As planned, preparatory works were done in the first quarter, field visit in the second, data analysis in the third and publishing works were done in the last quarter.

#### 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 |
|--|-----------------|---------------|------------|----------|
| Equipment  | 230             | 230           | 0          |          |
| Travel (US-KTM-US)   | 1000            | 1416          | -416       |          |
| Local Travel field   | 500             | 219           | +281       |          |
| Community programs, school stationary, reference books and sport items | 690             | 520           | +170       |          |

|  |      |         |         |  |
|--|------|---------|---------|--|
| Field accommodation                                | 1300 | 1467.57 | -167.57 |  |
| Communication, stationary                          | 250  | 240     | +10     |  |
| Herbarium management and identification, equipment | 100  | 75      | +25     |  |
| Fliers production and dispatch                     | 180  | 210     | -30     |  |
| Manuscript production and publishing               | 80   | 105     | -25     |  |
| Miscellaneous                                      | 160  |         |         |  |
| TOTAL  | 4490 | 4482.57 | +7.43   |  |

NPR 1 = £ 0.007 (<https://www.oanda.com/currency/converter/>)

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

The most important thing is to run the project, achieve the expected outputs and outcomes and share the knowledge to larger audiences such as local communities, academicians, professionals and conservancies. Publishing results and finding and sharing knowledge to larger audiences yield bigger impact, create wider attention and generate larger stewardship for nature conservation. Regarding this project, communities are aware about the threatened plants and the factors of threatening. They are now aware about the importance of indigenous knowledge and its effacement. They are eager to identify and conserve the indigenous species and control the invasive species. Communities, school teachers and DFOs have asked to catalogue the indigenous knowledge before being lost. The knowledge from traditional healers and elderly groups is daily effacing due to sociocultural change, outmigration, and land-use change. Because of biomedicalization and acculturation, indigenous knowledge was belittled, and immediate, nearby, non-indigenous, secondary, human-derived landscapes, etc. are hastily utilised. In absence of indigenous knowledge, indigenous species and remote and rural areas were left unattended resulting in rampant spread of invasive species generating additional threats to the sustenance of indigenous species, and the list of threatened species is increased. Working with local communities and collaborators, developing participatory mapping (clusters of species), encouraging educating children, and acknowledging indigenous knowledge seem pertinent in the recent future to adapt the changes.

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

Yes. I used RSGF logo in the fliers we distributed to local communities and in the presentations I shared to the concerned individuals and institutions. Well, the RSGF

has been acknowledged everywhere including our forthcoming papers. I presented one paper Ethnobotany of Nepal in Missouri Botanical Garden, USA in June 17, 2016 and acknowledge the support of RSGF. We are also going to present one paper Dynamics of Indigenous Medicinal Plants and Medicines in Far Western Nepal in Braganca Conference, Portugal in October 6, 2016. We are also including RSGF in acknowledgement list.

#### **11. Any other comments?**

The RSGF was quite helpful to me in networking with local communities because I was originally interested to co-work with communities in order to catalogue the indigenous knowledge of collection, use and management of useful plants of Kailash Sacred Landscape used by elderly groups and traditional healers. With the due help of RSGF, we shared much more information and are agreed to co-work in conservation of indigenous medicinal plant species and management of indigenous knowledge. Both elderly groups and traditional healers are a repository of traditional knowledge and always unwilling to share their information, unless we do participant observations and participatory rural appraisal.