

Final Project Evaluation Report

Your Details	
Full Name	Rinchen Dorji
Project Title	Diversity and Ethno-Botany Study of Ferns
Application ID	18874-1
Grant Amount	£5,000
Email Address	rdmagma@gmail.com
Date of this Report	27 th September 2018

1. 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
1) Diversity and abundance of fern from selected site.				The diversity of ferns from the two sites are being included in the report. The check list of the ferns from the study site are listed and compared the species composition from other areas. It is determined that the diversity of ferns from the selected site are very rich. It includes both edible and non-edible ferns. The abundance of ferns species in the study site is very rich due to intact and healthy forest coverage and also sustainable harvest practices. Diversity of edible ferns are also enumerated in line with the sustainable harvest and giving more important on conservation.
2) Ethno-botany study of the Fern.				Beginning of the field enumeration, forestry authorities and local community are being interviewed on the ethno-botany usages of fern species and the conservation status. During the field enumeration, park foresters are also involved to know the conservation status and to know how local people are harvesting the edible ferns and other ferns which are used for other purpose. Local people especially cattle herder make use of ferns in making the bed for cattle and to make manure. Making of cattle bed from the fern species is not weighty because it is being used only in winter seasons to make warm for cattle during cold weather.

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

There were few unforeseen difficulties during the field work but as a team, it was not much of a problem. At the beginning, the team faced difficulties in getting the local people for the field work. It was very much at ease after we form in good group.

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

1. I have been able to collect field data information and herbarium specimens that are available in the main repository and made accessible to students of botany, forestry, conservation, outside nature lovers and even educated farmers as well.
2. The achievement of this project was having photograph more pictures of fern species to make pictorial guide of ferns and also to help me to compile the checklist of ferns in western region which will add with other region checklist.
3. It was an opportunity to give awareness and conservation knowledge for people who live around the areas and those who depend on ferns business. If conservation of any plants is not given important, then it will bring disturb in ecosystem. The main target to create awareness on important and the role of Pteridophytes in ecosystem to field research staff was successfully achieved.

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

The local communities benefited through giving awareness on how to harvest the edible fern on a sustainable basis and how important to conserve and maintain the functioning of ecosystems and changes in their living standard over the time.

5. Are there any plans to continue this work?

In continuation to this project, I will continue to work and take initiative to carry out the further research. This kind of work need to make continue track. It is long term research work and more findings will generate the proper information and knowledge which will help to bring the result of research. It will also depend on the source of fund to get the research work in line. The planning has to be set. In Bhutan, this kind of research especially in pteridophytes have very limited database and information. I have been carrying out the field work even after the completion of the project funded by Rufford Foundation. This project has helped me to begin the pteridophytes research. It has helped me to find out some fern species which are very rare and I am doing further research to get the defined result.

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

As I have mentioned in my proposal regarding the pteridophytes research. In Bhutan, It is the first and very new research topic, since nobody has put interest on this subject before. pteridophytes research is constricted due to lack of journals, articles and research literature on this species and it has become one of the biggest challenges to pursue research. The major problem with this research is not having pteridophytes specialist in Bhutan.

I have involved the park foresters and directed them with research work clearly affirming the result of this research. This research has been worked in close collaboration with Department of Forest which consists of Non Wood Forest Product and College of Nature Resources. The technical field was support from National Biodiversity Centre. My research work has been proclaimed with strong support from

the Research Center. It has benefited for me as well as research centre having scientific findings and data for references. The key for successful field work and analytical outcome were supported by the research institutes, recognized agency and organisations. The result of this research will make available through biodiversity portal website or through publishing journals and pictorial guide book. The link between the pteridophytes project and research institute will be online and also sharing the research result for future references.

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

The grant from the Rufford Foundation was used through May 2016 to June 2017. After the completion of project, it helped me to continue my field work form the actual length of the project.

8. Budget: 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. It is important that you retain the management accounts and all paid invoices relating to the project for at least 2 years as these may be required for inspection at our discretion.

Item	Budgeted Amount	Actual Amount	Difference	Comments
Meetings/Training and education workshop costs	700	700		
Supplies	200	200		
Travel costs (DSA, maintenance, porter pony and fuel for vehicle)	2700	2,500		Increase of amount due to involvement of local people & researchers. Use of porter pony was more due to less accessible of motor able road
Other costs for awareness, purchase field equipment & money exchange charges	1,600	1,600		
Total	5,000	5,000		

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

As an important next step, the project will continue for the field work in those area where pteridophytes research are not carried out and continue with the involvement of local communities and researchers during field work. Awareness on conservation and sustainable harvest techniques for the fern business will carry on. Make the result available in the website through Biodiversity portal and also in yearly

research magazine. Continue to monitor the local communities on harvesting of edible ferns.

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

The funding of project was announced and used the foundation logo in the awareness meeting with the local communities, Park foresters and also to research centres. The Rufford Foundation logo will use in publication of journals and pictorial guide book.

11. Please provide a full list of all the members of your team and briefly what was their role in the project.

D.B. Gurung (PhD) -College of Nature Resources.

Phuntsho Thinley (PhD) -Ugyen Wangchuk Institute of Conservation and Environmental Research (UWICER).

Karma Gyeltshen (Sr. Ranger) -Punakha Forest Division Office.

Karma Jurme (Sr. Extension Officer) -Wangdue Extension Office.

Tashi Tshering (Research Officer) -Agricultural Research Development Centre (ARDC).

Jigme Gyeltshen (Sr. Ranger) -Jigme Dorji National Park.

Bal Krishna Kiorela (Sr. Ranger) -Jigme Dorji National Park.

Chimi Namgyel (Sr. Ranger) -Jigme Dorji National Park.

Tashi Wangchuk (Sr. Ranger) -Phobjikha Range Office.

Dorji Nidup (Farmer) -Goenshari village, Punakha Dzongkhag.

Karma Dorji (Farmer) -Goenshari village, Punakha Dzongkhag.

Kado (Farmer) -Goenshari Village, Punakha Dzongkhag.

Nado Rinchen (Farmer) -Limbukha Village, Punakha Dzongkhag.

Dorji Lam (Farmer) -Limbukha Village, Punakha Dzongkhag.

Karma Nidup (Farmer) -Limbukha village, Punakha Dzongkhag.

12. Any other comments?

As I have explained about the long term field exploration for the pteridophytes. Without the support from any donors, it has less scope to make formative works that are highly relevant and mostly adequate. I am fully fledged to work continuously in the interest of area that will find inaccessible to open up again for the collection of data. Targeting to cover all over the region of Bhutan. As continuously, your foundation has played a vital role in providing the finance support to carry out any kind of research work in the field of biodiversity for a country like Bhutan. My project team members are most grateful to Rufford Foundation (RF) for its financial support to our pteridophytes research programme. Through this project, I have loomed in wide scale to frame more and additional raw data for future research programme. Therefore, I am very much sure that the assistance/support from the Rufford Foundation will continue to improve research programme in Bhutan.



Left: Habitat of high altitude Fern species. Right: Porter pony for the Field expedition.



High Altitude Fern species

