

## The Rufford Foundation Final Report

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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](mailto:jane@rufford.org).

Thank you for your help.

**Josh Cole, Grants Director**

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Grant Recipient Details	
Your name	Kinley Tenzin
Project title	Ecology, Diversity and Conservation Implication of Bees and Wasps (Hymenoptera: Aculeata) in North Central Bhutan
RSG reference	17969-1
Reporting period	10th September, 2015-10th September, 2016
Amount of grant	£4990
Your email address	kinzintangbis@yahoo.com
Date of this report	15th July, 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
To determine species diversity, richness and abundance of bees and wasps from Bumthang and Trongsa District.			√	The diversity survey was completed covering the important habitats of bees and wasps viz. agriculture land, forest, kitchen garden, settlements, orchard and grass land.
To study habitat type, assess the current and potential threats for the conservation of these insects.			√	All the current and potential threats to the bees and wasps has been identified and addressed to the people for better management and conservation of these insects and their habitats.
To prepare publicity and advisory materials.		√		Thesis has been submitted to the College of Natural Resources and ready to submit the scientific papers to produce in journals.
To educate the local people students, teachers and forest officials on its ecological importance, habitat management and create conservation awareness.			√	Conservation awareness has been created to the communities, students and teachers in the study area. Presentations has been made for several times in CNR and high schools. Educated the peoples on the importance of these insects.

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

Difficulties are faced during inventorying and surveying in monsoon season while travelling from station to station in the study area due to heavy rain fall and road blocks. Thus taking more days then the planned period and incurred high expenditure. Some difficulties has been encountered in identification up to the species level.

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

1. The first outcome is that the study provided important baseline information on bees and wasps in north-central Bhutan in terms of diversity, distribution, habitat type and conservation threats. The study recorded 54 species of aculeate (bees and wasps) fauna belonging to eight families of which more than 70% of the families were social insects. The Apidae was found to be the most dominant family in terms of number of species. The species diversity was high for Trongsa compared to Bumthag. The study also revealed bees and wasps are occasionally encountered from forest followed by agriculture land, species diversity and richness is found to be highest at altitudinal range of 1000-2000 m asl.
2. The second outcome of the project was assessment of current and potential threats faced by these group of insects. The study found that main threats faced by aculeates were developmental activities like construction of hydropower dams, road and buildings, followed by hunting and consumption in the study area. Bhutan is now in full swing of developmental activities such as hydropower, buildings and roads which results in habitat loss and fragmentation. The second most threat is hunting and consumption.
3. People are really unaware of these ecologically important insects, so one of the main outcome of this project was education of the local people, students, teachers and forest officials on its ecological importance, habitat management and conservation awareness. These groups of people including rural residents in the project area were made aware of the importance of conserving bees and wasps, and their habitats. Now most of the people were aware and willing to support conservation program, which indicate that people prospective had changed mainly due to this initiation.

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

As mentioned in the proposal social survey has be conducted with village naturalist and individual respondents with semi structured questionnaires to get general idea and information on aculeate insects, their habitat and nesting areas. All possible areas of bees and wasps occurrence in the study area were identified through consultation with local people. During such consultation and interview people were provided with incentive and daily subsistence allowances.

Ten local community members from different localities were also directly involved in the whole project period. These local people were engaged in specimen and data collection and were paid daily subsistence allowances and service charges in full as per entitlements under the government laws. In addition, some local people were

indirectly benefited through purchasing of their dairy products and vegetables by the surveyors during the field survey.

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

Yes, I have a plan to continue with the similar project in future, as I have gained good knowledge and experiences from the current project. The current project which was first of its kind for Bhutan has been conducted exclusively in north central part of the country but, we still have vast areas to be explored. In Bhutan, conservation programmes are targeted mostly for large mammals, birds, reptiles and amphibians; that too in the protected areas, whereby exploring biodiversity outside parks and wildlife sanctuaries are often not prioritised due to inadequate conservation fund and important insects are neglected. Thus, I feel it is necessary to explore more on insects especially hymenopterans in all the potential areas whether or not they fall in protected areas so as to come up with checklist for the country and strengthen the conservation of bees and wasps.

Therefore, I look forward for another grant from RSGF. The grant will be utilised for the field work and payment for community involvement in conservation programmes as I have already procured all necessary equipment from the first grant. The project will be carried out with almost similar objectives in western part of the country so as to come up with more number of species. At the same time with the aim to educate and promote understanding among different groups of people in conservation of these insect group in western Bhutan.

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

Diversity of bees and wasps in north-central Bhutan has been presented for the students and the faculty members of the College of Natural Resources, Lobesa, Royal University of Bhutan. Educated the communities and forest officials on diversity and Importance of bees and wasps. Created conservation awareness to students, teachers and communities in the study area.

A thesis on Diversity and Ecology of Bees and Wasps (Hymenoptera: Aculeata) in North Central Bhutan (as a part of my in-service BSc Forestry (majoring in Conservation Science) has already been published and all the information used were from the findings of this project. The thesis copy has been submitted to the College, Department of Forest and Park Services, National Biodiversity Centre, Natural Resources Development Corporation and Research Development Centre as reference. Scientific paper has been already prepared and ready to submit for publication.

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

My work started from September 2015. The grant was used from September 2015 till August 2016 i.e. for the duration of 12 months.

**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. 1 £ sterling = 4.44 Nuevo Sol**

Item	Budgeted Amount	Actual Amount	Difference	Comments
Digital camera(DSLR)	950	942	+8	
Binocular	180	105	+75	
GPS handset	380	228	+152	Simple type GPS handset has been purchased instead of the one that was mentioned in the budget.
Insect nets (5 Nos.)	35	54	-19	
Insect collecting box and mounting kits(5 sets)	250	180	+70	
Insect protection(folding beekeeping veil)(5 Nos)	140	155	-15	
Purchase of stationeries	35	80	-45	
Extension kids(sleeping bags, rain gears, ruck sacks, boots and pack bags)	780	720	+60	
Food and Logistics	350	410	-60	
Payment/daily allowance for the field staffs employed during the field survey	800	850	-50	The Daily Allowance of the civil servants has increased as per the government directives and the labours demand more than the actual

				daily wages as field work is in the forest.
Printing cost	200	180	+20	
Charges to potters and ponies	240	200	+40	
Vehicle rental and maintenance	450	530	-80	The vehicle hiring charge increased and the fuel prices increased three times in the last one year
Data compilation, report writing presentation on findings and conservation awareness and exit meeting.	200	350	-150	More cost has been incurred in giving the refreshments and lunch while creating conservation awareness.
<b>Total</b>	<b>4990</b>	<b>4984</b>	<b>+6</b>	<b>Balance of £ 6 is left with me after the completion of the project</b>

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

The next important steps that I feel is the documentation of bees and wasps for the country and strengthening public understanding through participatory approach. Accordingly awareness on its importance and conservation should be created in other parts of the country. Sensitisation activities through publication of scientific paper in journals and other scientific forum, developing monitoring guidelines and seminars regarding the importance of these ecologically important insects must be prioritised.

## 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?

Yes, the Rufford Foundation logo was used during my presentations and posters. Peoples were informed about the support of RSGF for studying bees and wasps in north-central Bhutan. RSG has been proudly acknowledged in the reports and publications. I shared the support of Rufford foundation to the friends and many of my friends applied for the Rufford Small Grant and were awarded.

#### 11. Any other comments?

I am very much thankful to Rufford Small Grants Foundation for providing financial support to complete my project successfully. Although we are interested in studying, protecting and conserving our species on the earth, the lack of fund is major problem faced by individuals, groups or country particularly in developing nations like my country. I appreciate the Rufford Foundation for helping us in conservation of nature all over the world. I am very grateful for the Rufford Foundation for providing such grants. Thank you (Rufford) very much for awarding the grant.

