

## 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. 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	
<b>Your name</b>	Santa Pandit
<b>Project title</b>	Status of Awareness and its Linkage in Conserving Biological Corridor of Western Terai
<b>RSG reference</b>	12750-1
<b>Reporting period</b>	Jan 2014
<b>Amount of grant</b>	£3950
<b>Your email address</b>	razs.san@gmail.com
<b>Date of this report</b>	Feb 16 2014

**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
Forest and land use change mapping by using GIS			√	If more high-resolution satellite images were available than more would be the accuracy of the output map.
Scientific documentation of the flora and fauna		√		Vegetation inventory was achieved whereas in term of animals' survey it was difficult to trap them in digital cameras though their primary habitat and the area where there is frequent movement of animals were identified we were only able to trace their evidences such as pugmarks, scat/pellets. In the past, no one has conducted such survey though this corridor plays a crucial role for the animal's movement between India's national park and Nepal national park and could be a medium for a population increment of animals. So, camera trapping would be the most appropriate tool for further in-depth research.
Corridor conservation awareness programme			√	This part of the project was one of the significant activities where we conducted briquette training for the women groups as a source of alternative energy for the first time. As people are highly dependent on forest product for their day to day life and still uses the wood as a major source of fuel. Eight schools from the three villages were chosen for awareness among children where they were unaware about the corridor and there existed such corridor in their surroundings. For the plantation more than 200 people were directly involved from which we can draw conclusion people are diverted toward conservation for the win-win situation. Also hoarding board was installed in three main areas connected the four villages where there are high movement of peoples. And lastly, message to conserve biodiversity

				and habitat of animals through radio program, where listeners including children, youth and adults were benefited.
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**2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).**

As planned activities, plantation along the bank of Mohana River was one of them. Plantation was conducted as scheduled. We planted around 4500 different plant species but, after a month as monsoon arrived; nearly 50% of the plants were swept away by the flooded water. This was the problem which came up during my field trip and to compensate this nearly to the end of the monsoon again plantation was conducted at the same site area and all thanks goes to the community forest users' group and women groups. Now nearly, 75 % of the planted species has succeeded to survive.

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

*1. Forest and land use cover change.*

The aims of the study were to quantify and map the spatio-temporal pattern of forest cover change in term of land use changes between 1996-2013. Supervised classification was used to prepare land use maps using the maximum likelihood algorithm. Image classification was carried out by emphasising six main categories mainly on forest cover areas.

The study revealed that there is a net decrease in forest cover from 1996 to 2013. The 1996 map was taken as a base map which has been published by Department of Survey Government of Nepal which was interpreted in GIS later. In 1996, forest cover age area was 63.73%, whereas in 2002 it was 47.73% and in 2013 it was 35.9 %. This shows that there is a rapid decrease in forest cover from 1996 to 2002 with the rate of changes 4.90% and 3.57% from 2002 to 2013. This compensates for an increase in bush area where in 1996 its coverage was 1.37% of the total study area, which increased to 25% and in 2013 to 29%. The overall accuracy was 78% for both year maps. And the main reason behind the forest destruction is for settlement inside the forest area.

*2. Scientific documentation of species.*

For the vegetation analysis 20 X 20 m quadrats were used and the trees species within the quadrat were noted. For the vegetation analysis, altogether 49 samples were generated from the ARCGIS by using Hawth's tool which later on incorporated in GPS for the species diversity. Altogether there were 21 species identified with their scientific name whereas 5 species were identified with the local name (vernacular name) and one species with unidentified.

The most dominant species are: *Shorea robusta*, *Mallotus phillippensis*, *Terminalia alata*, *Syzigium cumini*, *Lagerstroemia parviflora*, *Cassia fistula*, *Bombax ceiba*, *Acacia catechu*, *Flemingia procumbens* *Pterocarpus marsupium*, *Dalbergia sissoo*, *Ficus benghalensis*, *Semacarpus anacardium*, *Picrasma javanica*, *Garuga pinnata*. Among these *Shorea robusta*, *Cassia fistula*, *Pterocarpus marsupium*, *Sanan*, and *Surai* (vernacular name) are protected plants.

For animal's survey 10 X 10 km grid was prepared from ARCGIS by using Hawth's tool. Of total seven sampling plots five plots were taken for the line transect walk along east-west and north south. The animal's presence evidence such as pugmarks, scat/pellets, was captured in digital cameras and GPS location was noted. As it was purely opportunistic research altogether eight species were recorded, *Boselaphus tragocamelus*, *Sus scrofa*, *Lepus nigricollis*, *Axis*, *Panthera pardus*, *Asiatic maximus* *Semnopithecus entellus*, and *Hystrix indica*.

### 3. Outreach and Awareness Programme

Effective outreach and awareness are essential for promoting conservation status and for changing the people' attitude towards the use of natural resources. With this main motto, training on briquette for the existing women group from the forest product was one of the main outreach programmes where we conducted 5 days of training for 30 participants from three village development committees. They were also made aware about the ecological and economical importance of the briquette in this contemporary period. Also, pamphlets on how to make briquettes and their importance were distributed not only in the target study area but also other few places of Nepal where such training was conducted. At the end of the training a set of moulds for briquette was distributed for three groups. Another main awareness programme was conducted in school where community-based school was chosen from the four Village Development Committee. What is corridor and why it is important for animals and for human was topic that we discussed in each lecture class. The awareness was not only limited for lecture class but also students were taken for jungle walk where we tried to make students to identify the different plant species and what are its uses in their day to day life. Also, birdwatching was one of the interesting parts where students enjoyed for doing this first time.

Radio programme was also on air including 20 minutes where we discussed biodiversity and its conservation issues. Local people, students and people who are engaged in conservation of Mohana-laljhadi conservation area were interviewed to know the status of forest and what are the challenges that they are facing through and what we could done in near future to make a balanced existence between wild animals and people. Also, planting along the river side of the Mohana was conducted with the active participation of different community forest users group where altogether 4500 plants were planted including three species of bamboo, *Bambus strictus*, *Calamus tenuis*, and *Arundinaria* sp., *Phragmites karka*, *Bauhinia variegata*, *Eucalyptus* sp. and *Dalbergia sisoo*. And lastly, installation of hoarding board in three main areas to spreading the information about the Mohana-Laljhadi Corridor was carried out.

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

In this project, local communities, especially women, were involved directly. We have conducted small charcoal briquette training where more than 30 women actively participated. Also, during the plantation programme there was outstanding participation from different community forest users' groups including men, women and children showing their enthusiastic participation. Altogether there were 300 participants for plantation which was scheduled for 3 days in different site areas.

Also, during the research activity inside the forest, forest guard was hired so that it could be easier to work inside the forest area.

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

The activities that have been completed are just the beginning of the fine research work and much more to do further. In context of the vegetation survey the regeneration capacity of the national forest and community forest (parts of the national forest have been handed to community) within the whole forest region must be observe. This allows a better understanding in between the forest condition of national and community forest or we can say which one is the better. Secondly, for the animal survey camera trapping would be the most appropriate step after this research where we have found the evidence of frequent movement of the wild animals. And this effort would be the first initiation within the study area as non of the other concerned bodies have given such priority even though two national parks have connected with this region (Shukla Phanta National Park, Nepal and Dudhuwa National Park, India). And lastly, the most important one is to give prior importance in raising the level of awareness among the general people. During my field visit where I conducted school awareness programme, it was heart-breaking to say that students have no idea about the corridors and why it is meant for and what are its benefits. So, in near future if I got an opportunity to work further in this region, I would like to conduct workshop for school students and for community people both.

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

Report generated from this research has been already disseminated to Mohana-Laljhadi Conservation Area (Department of Forest) which is the sole authority for the management of this conservation area. The copy of this report will be made available in the WWF-Nepal and Resources Himalaya Foundation where my two national advisors are associated with it. Also, I have given to the one of the journal publication houses here and waiting for their approval.

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

The RSG was used during the field study period of the project from January 2013 - January 2014. This covers the major field study period of the research activities in the three phase of the duration. Firstly, research activities in the forest secondly, plantation and thirdly, awareness programme in schools and community.

## 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
Transportation	215	240	+24	Increase in transportation cost by authority.
Accommodation	1285	1350	+65	Three times field visit with one field assistant increases estimated budget.
Research materials	525	500	-25	for image it was requested from WWF so deducted
Radio programme	1315	1325	+10	Charge for the RJ.

Outreach programme (Awareness+ training)	150+150=300	320	+20	Increase in printing cost and more poster and briquette training pamphlet were published.
Stationery and Communication	20+40=60	50	-10	Managed in low budget
Report Preparation	50	45	-5	
Peer review	200	119 extras used 40 reduced than estimated	-79 saved	Estimated peer review budget was saved (£79) which was later used for buying binocular which was provided to two schools.
<b>Total</b>	3950	3949	-1	

Exchange rate 1£= 135 NRs.

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

After the completion of this project, I am feeling the need of further assessment of wildlife movement by camera trapping as corridor is one of the important natural environment of the animals where it maintain the viable population and most importantly the corridor which connects the border of two nations should be under the top priority for maintaining its natural environment and the awareness among the school children over the study area was found very poor as none of the organisation has put an effort for school programs so further important steps that should be carried in future is to increase the level of awareness among the school children plus at community level. This will help to build mindful of responsibilities among the children and local people what they have around them and what they can lose in future if its importance are not recognised in timely and steps are not carried for the animals and its habitat conservation.

### 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 the logo of RSGF from the beginning of the research activities. And mostly it was used in outreach programmes such as in flex, posters and in banner. The logo was printed as it is whereas slogan was written in easily understandable Nepali language. Here I must share during the school program where students have never heard the name of WWF and what it does, I was able to share little information about RSGF and how it is helping in conservation besides printed in banner. RSGF has been recognized in my study area.

### 11. Any other comments?

No such comments for RSGF. Their support is highly appreciated.