

Final Project Evaluation Report

Your Details	
Full Name	Sagar Raj Kandel
Project Title	Strengthening the Community Tolerance and Ownership on Two Big Felids (Tiger and Leopard) Conservation in Banke National Park and Kamdi Corridor
Application ID	23533-1
Grant Amount	£5,000
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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
Diet composition of two felids tiger and leopard				All total 50 scats samples of tiger and 60 scats samples of leopard were collected and successfully analysed.
Determination of prey density				All total 147 line transect (including chure additional grid), length varies between 1.5 km to 2 km was surveyed excluding chure. Length in chure varies greatly.
People's attitudes toward leopard and tiger conservation through questionnaire survey				More than 120 questionnaires were surveyed to quantify the people's aspiration towards conservation of felids.
Community awareness program around Banke National Park and Kamdi Corridor				Community awareness programme was conducted in two different location. However, we have visited our all four target areas but people participants were not found.
School children awareness program around Banke National Park and Kamdi Corridor				After the consultation of park authorities, we had successfully achieved our objectives on this aspect

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

Budget allocation was not done for scat collection and for the equipment. We had hoped that scats will be collected with certain difficulties, but the level of obstacles were higher than we had expected. So, request was granted by The Rufford Foundation on these aspects. And we successfully achieved our objectives.

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

Scat Composition:

After the careful examination of successive 10 scats of both felids, number of new species recorded tend to stabilise after we examine the 40 scats of tiger and 50 scats of leopard. Thus, we assume that almost 50 and 60 scats sample size was enough to know the diet pattern of tiger and leopard respectively from the study area.

We successfully identify the nine prey species in tiger diets. They were chital (*Axis axis*), wild boar (*Sus scrofa*), barking deer (*Muntiacus muntjak*), chauka (*Tracercus*

quadricornis), hog deer (*Axis porcinus*), sambar (*Cervus unicolor*), nilgai (*Boselaphus tragocamelus*), cattle (*Bos taurus*), buffalo (*Bubalus bubalis*). Interestingly, leopard's diet consists of additional species namely masked palm civet (*Puguma larvata*), jackal (*Canis aureus*), macaque (*Macaca mulatta*), langur (*Semnopithecus entellus*), goat (*Capra aegarus*), sheep (*Ovis aries*), dog (*Canis lupus*) and other rodents and bird's species.

Prey density:

All total we had walked around 225 km in 147 line transect. However, the detection was found in 73 transect only. All total 11 prey species were detected during the line transect. Macaques were the most detected primate followed by wild ungulates like chital and wild boar were observed in high number.

Species	Transect detected	Total sighted	Cited /km	Cited (%) /km
Sambar	5	9	0.04	3.03
Bluebull	1	7	0.03	2.36
Chauka	9	14	0.06	4.71
Chital	19	70	0.31	23.57
Wild boar	10	51	0.23	17.17
Barking deer	7	8	0.04	2.69
Hog deer	1	1	0.00	0.34
Jackal	1	1	0.00	0.34
Rabbit	1	1	0.00	0.34
Langur	3	20	0.09	6.73
Macaque	16	115	0.51	38.72

General findings:

Before 2010, Banke National Park (BaNP) was under the control of Divisional Forest Office (DFO), where species diversity, management strategies were not so effective. With initiation to extend the tiger habitat from Bardiya National Park (BNP), BaNP was established. Around 52% of BaNP consist of fragile land (Chure), which is susceptible to disaster if conservation is abandoned. Therefore, except saving the endangered species, BaNP has been playing role in safeguarding the fragile ecosystem of Chure.

From the Focus Group Discussion (FGD), it came to know that Kamdi corridor is newly established corridor, which is under the supervision of DFO. Presence of tiger and leopard in BaNP highlights its potential to harbour such territorial species. However, the capacity of BaNP to know how much tiger could really hold, is still needed to be researched. Their natural prey base number, waterhole creation and grassland maintenance are challenging issues for BaNP to conserve tiger. With increase in the number of carnivores, maintaining harmony between carnivores and people will be difficult in terms of BaNP, where park is at the early stage and do not have enough trained staff, conservation education regarding park rules and regulation are still lacking.

Local people are willing for the conservation of tiger and leopard but alternatives for their livelihood like tourism is not addressed. People claimed that park has created the pressure on local farmers and people. Wild boar are the main problems for the

local farmers. Crops are raided by them and the compensation is not so satisfactory; even the process to claim for the compensation is not so fair and easy. Due to this reason some local farmers do not claim for the compensation. Fencing had been done but is not effective to control the wild boar. Among two felids leopard sometimes enter the village and killed the domestic livestock (goat and sheep). One of the members of FDG mentioned that the government is interested to rare tiger only but not the people. We are afraid that they are present in our forest. Our livelihoods depend on farming and have to depend on forest. The government is not providing any alternatives and not making conservation favourable to local communities.

Goat, sheep, cattle, buffalo and pig were the domestic livestock reared by people. Among them goat was the most killed domestic animal followed by cattle, and sheep. Dog must be feral as during questionnaire no dog depredation was recorded. However, during the focus group discussion, respondents had mentioned that increase in feral dogs have even injured the chital in the park, which has alerted the park authorities also. This might be the reason that feral dogs while roaming around were prey by carnivores. Among the respondents 55% of them believed that leopard is notorious that entered in the shed and even killed the domestic animals like goat and sheep and others. Only few respondents around 21% believe that livestock depredation was caused by tiger, while remaining percentage of interviewer don't know who were the actual predator of their livestock among two felids. Especially tiger do not come out to the dense forest, they were thought to have killed the cattle, buffalo and other domestic animals in forest area.

Despite the conflicts related to the livestock depredation around 54% of people agree to conserve these carnivores, whereas only 10% of respondents were against the conservation of felids. Around 34% of respondents were stuck in dilemma whether to conserve tiger and leopard in their surrounding or not.

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

One aspect of our project was community awareness programme. Among the four communities selected, two communities were actively involved. We had made our presence in remaining two communities but the people participation was not significant. I had made a call to parents through schoolchildren. However, their absence makes me aware that people are not satisfied with park, and many alternative options are on demand to make their lives easy as mentioned by principal of Shiva-Shakti Higher Secondary Schools. Active participation in two communities made me really aware that people are having the tedious process in compensation mechanism of livestock losses and crop raiding. They believed that this project was the best option to share their hurdles and hope to bridge the relation between park and local people. To some extent, we had shared these findings to park personnel, who also believed that they are still feeling the gap in some practice. One scenario, between park and community people had been identified which might foster the relation between them if managed in future. Community people even mentioned that no such program was conducted by park

to aware the people regarding the conservation of species. They were benefited by the species' information, park policies and reason behind the establishment of Banke National Park. Such awareness programme was the demand of community identified by park itself so that the relation could be tighten. Hope this project has supplemented a lot in this aspect also. They were thankful to this project at least someone listen to the hurdles of buffer zone people. We hope our scientific research will enable the scenario of park people conflict from that area.

5. Are there any plans to continue this work?

Sure, I would love to continue this work. During the next phase project members will try to emphasise the study in Banke National Park only. As we ourselves had documented the poaching of sambar and unidentified species. Chure section is under the threats of deforestation which has potential to harbour the population of tiger and leopard in future. The study will work in collaboration of Nepal Army, buffer zones community members and community based anti-poaching units. Genetic analysis of scats will be conducted. Some samples are already being collected during first phase of this program 2018/19 with an interest to continue this work.

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

We will share our information to both national and international communities through the publishment of research articles. We are optimistic on this aspect that we will soon publish our articles from our findings in one of the peer reviewed journal. Not, only that we will share our findings with students of Central Department of Environmental Science.

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

The grant used period was from August, 2018 to June 2019. Overall, the project had completed within the time period. Scientific articles will be published soon.

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
Travel from Kathmandu to Banke (to and fro) for 4 individuals for 8 times @£10per person =£320 4 group school children take-up and drop @£50 per	720	720		

group=£200 During Community awareness, 4 time to reach the site @£50=£200				
Lab work: 40 days for 2 individuals at @£5 per day	600	400	-200	Scat analysis took 60 days throughout the project period.
Chemicals for scats analysis includes Lysol, slide including slide cover, Acetone, DPX, Ethanol, Distill Water, Sodium Hypochlorite, Xylene and also includes vials for sample collection@£600	500	600	+100	
During line transect; Food cost of 20 days for 6 individuals at @£10 per day	1200	1200		
Scat collection with 3 field assistance including me throughout the project period for @£10 per day for 30 days	816	900	+84	This budget was necessary during the course of field as I found difficulty in searching scats to accomplish my target. (Change was informed)
Field equipment one GPS £130	110	110		This budget was necessary during the field as I found at least one GPS with me will ease my work (Change was informed)
One day program at Banke National Park for nature walk and prize distribution @£100, students food @£5 per head approximately 100 including students and guests=£500	500	600	+100	
Community awareness program at four different places for 8 days @£10 per day for 3 individuals	240	240		
5 topo map of study area @£6=£30, Stationery includes pen, pencil and note book with Rufford printing at front side, and poster printing @£300	54	54		
Food and accommodation cost of principal investigator for 20 days @£10 per day= £200 and 3 Focus Group Discussions @£20=£60	260	260		
Total	5000	5084	84	

Only, The Rufford foundation small grant budget is included (£5,000).

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

Controlling poaching, Strengthening the anti-poaching community, scientific research and awareness program (promotional material based on park policies and laws, animals found within Banke National Park)

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?

Sure, I had used The Rufford Foundation logo in every material produced during the course of this project. The Rufford Foundation logo was used as per the norms of the foundation. Regarding the publicity of foundation, the project was supported by local media like Newspapers and F.M.

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

Name of the member	Role in the project
Sagar Raj Kandel	Worked as Principle Investigator and handle the project throughout the project with direct involvement. Lab work, scat analysis and article formation. Maintain reliable communication in every aspect of this project.
Prakash Chandra Aryal	He helped in questionnaire survey and in review aspect of all the work throughout the project. Certain statistical calculation was done under his supervision.
Krishna Lal Chaudary	Managed the school and community awareness program and help the project to build the media connection
Pranaya Kumar Jha	Help for the coordination in line transect and scat collection.
Babu Ram Lamichhane	Guide this project in line transect (Sample design)

12. Any other comments?

Thanks to The Rufford Foundation, Banke National Park, and communities of Bake and local media for your support. And, few schools who had requested to conduct such awareness programme in their schools in future.