

The Rufford Foundation Final Report

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.

Thank you for your help.

Josh Cole, Grants Director

Grant Recipient Details	
Your name	Khadananda Paudel
Project title	Involving veterinary practitioners for the conservation of critically endangered vultures in eastern lowland of Nepal
RSG reference	20487-2
Reporting period	September 2016 to August 2017
Amount of grant	£ 4980
Your email address	knpaudel@gmail.com ; khadananda@cibio.up.pt
Date of this report	11-08-2017

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
<p>1. To train veterinary practitioners on issues of vulture conservation and their role in stopping use of diclofenac and other toxic drugs to vultures in veterinary practice.</p>				<p>A workshop with representatives of veterinary practitioners, veterinary pharmacy owners and District Livestock Service Office was organised in collaboration with Nepal Para Veterinary and Livestock Association district chapter Sunsari at Inaruwa, Sunsari on 1 December 2016 where 30 participants took part in the programme.</p> <p>Trainings to veterinary practitioners were carried out in eight project districts: Mahottari, Dhanusha, Sarlahi, Siraha, Saptari, Sunsari, Morang and Jhapa during 26 January, 27 January, 29 January, 13 April, 16 April, 17 April, 18 April and 23 April 2017 respectively. The training was implemented in collaboration with Nepal Paravet and Livestock Association in each district. Representative from District Livestock Service Office and journalists were also invited in the training programmes. Altogether 165 participants participated in all these eight training. To evaluate the change in knowledge level of participants before and after the training pre and post questionnaire survey was conducted.</p> <p>One hundred t-shirts putting the message of stopping use of diclofenac as well as other toxic drugs for conservation of vultures were printed during November 2017 and were distributed to the relevant stakeholders during project execution.</p>
<p>2. To raise awareness on vulture conservation issues among local youths and school students.</p>				<p>Awareness programmes to school students and local youths were also conducted in project area during January and April 2017. Awareness programmes to school students were conducted in Shree Mahendra Higher Secondary School Ramgopalpur, Mahottari on 26 January 2017; Janaki Secondary English Boarding School Janakpurdham, Dhanusha on 27 January 2017; Bhanu Memorial English</p>

			<p>Boarding School Biratnagar, Morang on 20 April 2017; Himalayan Secondary School Damak-2, Jhapa and Siddhartha Boarding Higher Secondary School Belauri, Damak, Jhapa on 24 April 2017; Adharbhut Higher Secondary School Maleth, Rajbiraj, Saptari and Laligurans Secondary English Boarding School Maleth, Rajbiraj, Saptari on 26 April 2017; Inaruwa English Boarding School Inaruwa, Sunsari on 28 April 2018. Similarly awareness programmes to local youths were conducted to Shree Jamkabhet Youth Club lalgadh, Dhanusha on 28 January 2017 and to Adarsha Youth Club Budhashanti, Budhabare, Jhapa on 14 April 2017. Altogether 417 participants participated in all these 10 awareness campaigns.</p> <p>One thousand copies of posters (A2 size) having the message of stopping the use of diclofenac as well as other toxic drugs for conservation of vultures were printed during November 2017 and were distributed to the relevant stakeholders during project execution.</p> <p>Radio programme named "vulture conservation" was conducted for 6 months from January 2017 to June 2017 in collaboration with a radio station named Popular FM 99.5 MHZ which is based in Inaruwa, Sunsari and has coverage in most of the project districts. One episode of about 15 minutes every Saturday at 8:00 AM was broadcasted. During these episodes key information on cause of vulture decline, stopping vulture toxic drugs and information on roles of stakeholders on conserving vultures in both the language Nepali and Maithali was disseminated (Maithali is the local language here). In addition to this, interviews with local key stakeholders for vulture conservation were also broadcasted through this programme.</p>
<p>3. To explore threats to vultures other than toxic NSAIDs.</p>			<p>A questionnaire was developed to assess threats to small remaining populations of critically endangered vultures and administered with veterinary practitioners and local communities in the project area during April 2017. The questionnaire was divided into</p>

			<p>three sections. The first section includes questions on their livestock holdings, veterinary treatment being done or not for the livestock when they get sick and fate of carcasses after livestock die in their homes; the second section includes questions about the perception of local people on: are vultures declining from their reasons? and ways how to halt the decline; and third section includes questions on: what might be the causes other than veterinary NSAIDs that are responsible for decline of vultures in their region? Altogether 168 people were interviewed. The data has been analysed and summary of results is included in this report.</p>
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

There were no major difficulties occurred during the project implementation.

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

Output 1: Key stakeholders engagement

Veterinary practitioners are the key stakeholders for the conservation of critically endangered vultures in Nepal as it has been identified that the major cause for the decline of vultures in South Asia is the veterinary use of diclofenac and users of veterinary NSAIDs are veterinary practitioners. The project was successful in involving 195 participants including veterinary practitioners and officials from District Livestock Service Offices from project area during trainings and a workshop. In training, the participants were made aware on the history and issues of vulture conservation as well as their roles in conservation of vultures.

In addition to this, pre- and post-questionnaires (altogether 13 questions) were asked of participants to evaluate the change of knowledge in participants before and after the trainings. All possible efforts were made to reduce the errors on this evaluation for example placing participants distant from one another. The evaluation of the training programme shows that knowledge level of participants on “vultures of Nepal and causes of decline” was significantly different before and after the training. (Table: 1)

Table 1: Significance of the parameters with the participants' knowledge level before and after the training programme.

Questions		before and after training		χ^2 value	P value
		Pre_training	Post_training		
		Count	Count		
Question 1	correct	35	120	110.551	<.001**
	incorrect	99	14		
Question 2	correct	51	93	26.476	<.001**
	incorrect	83	41		
Question 3	correct	34	108	82.024	<.001**
	incorrect	100	26		
Question 4	correct	22	91	72.849	<.001**
	incorrect	112	43		
Question 5	correct	105	121	7.228	.007**
	incorrect	29	13		
Question 6	correct	37	103	65.146	<.001**
	incorrect	97	31		
Question 7	correct	57	123	73.700	<.001**
	incorrect	77	11		
Question 8	correct	22	124	156.539	<.001**
	incorrect	112	10		
Question 9	correct	112	133	20.974	<.001**
	incorrect	22	1		
Question 10	correct	105	132	26.592	<.001**
	incorrect	29	2		
Question 11	correct	12	91	98.416	<.001**
	incorrect	122	43		
Question 12	correct	87	120	23.113	<.001**
	incorrect	47	14		
Question 13	correct	55	113	53.664	<.001**
	incorrect	79	21		

[Note: ** significant different at 0.05]

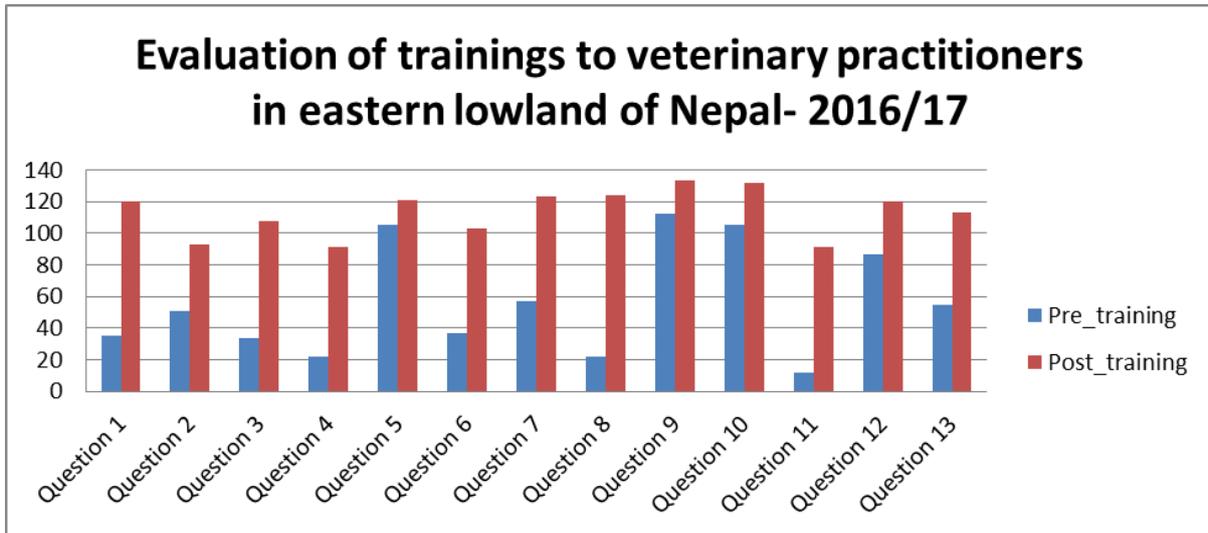


Figure 1: Change in knowledge level of participants due to training.

Output 2:

The questionnaire survey with local people and veterinary practitioners has some important findings. The questionnaire survey was conducted with 168 participants including community people and veterinary practitioners from Siraha, Saptari, Sunsari, Morang and Jhapa districts. The major findings from this research are as below:

A. People in the project area rear less number of cows and buffaloes in comparison to ten years before (Figure 2).

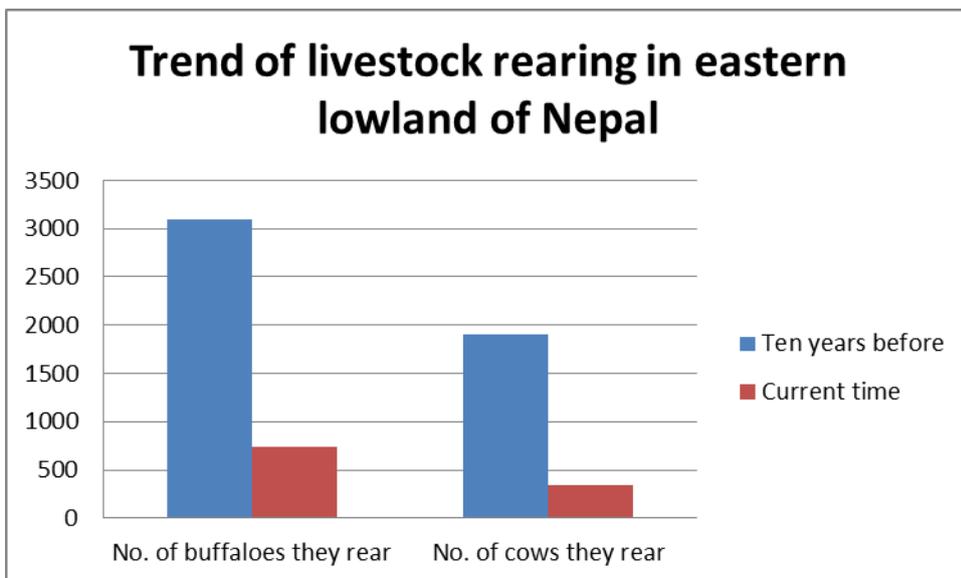


Figure 2: No. of buffaloes and cows they rear before ten years and now.

B. According to this research, 96.6% respondents used to bury their livestock if they die when animals are with them while only 3.4% respondents used to provide the dying livestock to vulture restaurant (i.e. safe feeding station for vultures). This

shows that significant number of people in Siraha, Saptari, Sunsari, Morang and Jhapa bury the carcasses of livestock after they are dead ($\chi^2 = 139.629$, $df = 1$, $p < 0.001$). Likely, most people in study area agree and is significantly different to the people who disagree on: livestock number is decreasing in their area ($\chi^2 = 94.895$, $df = 2$, $p < 0.001$); less livestock carcasses are available for vultures than in the past ($\chi^2 = 203.885$, $df = 2$, $p < 0.001$); less availability of food is a threat to vultures ($\chi^2 = 197.922$, $df = 2$, $p < 0.001$); electrocution is a threat to vultures ($\chi^2 = 9.784$, $df = 2$, $p = 0.008$); poisoning is a threat to vultures ($\chi^2 = 59.429$, $df = 2$, $p < 0.001$) and increasing availability of food will help in conservation of vultures ($\chi^2 = 136.804$, $df = 3$, $p < 0.001$).

Output 3: Following the works by project, Sarlahi and Mahottari districts have been recently declared veterinary diclofenac free districts in joint effort of District Livestock Service Offices of respective districts and Bird Conservation Nepal.

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

Community of veterinary technicians and their associations were mostly involved in this project as this project was implemented in collaboration with district committee of Nepal Para veterinary and Livestock Association in all districts. Awareness level on vulture conservation issues and their roles was raised. The project also helped in raising awareness of local youths and students in the project area. In addition to this, local community of Saptari and Sunsari were interviewed to assess the threats to vultures in their region.

5. Are there any plans to continue this work?

After it was known that diclofenac was the major cause for the decline in Gyps vultures in South Asia and ban on diclofenac was put on 2006 in Nepal and conservation efforts in Nepal to conserve the majestic birds have been able to show some positive signs of recovery of vulture populations in Nepal. However, all populations remain small and therefore vulnerable. Threats other than diclofenac might prevent the restoration of vulture populations. Moreover, a study conducted by this project shows evidence that less availability of food in eastern Nepal in comparison to past years are causing problem for vultures. Finding the other threats that might have caused problem to remaining vulture populations and changing the focus of conservation actions according to the recommendation of such research needs to be continued in Nepal this is why the project needs to be continued.

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

The project activities and preliminary findings have been published on several local and national print media and radios. The results will be shared through talk programmes and presentations in different forums. Further, we plan to share the results to academic community through participation in conferences and publication in peer reviewed journals.

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

The Rufford Foundation Grant was used from November 2016 to June 2017. The actual timeline for the project implementation followed the anticipated timeline.

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 cost during field visit	480	525	-45	
Sustenance cost during the field visit	1440	1320	120	
Cost of workshop	200	270	-70	
Cost of trainings to vet Practitioners (8 events)	1120	1208	-88	
Cost of awareness events with school students and local youths (10 events)	140	108	32	
Cost for tshirts- 100 units	400	430	-30	
Printing cost for posters- 1000 units	300	280	20	
Radio Programme cost for six months	700	550	150	
Communication and printing cost	200	289	-89	
Total	4980	4980	0	

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

This project has revealed that the factors other than toxic NSAIDs including diclofenac might possibly prevent the restoration of vulture populations in Nepal. Thus detail study needs to be conducted to confirm if other factors such as less availability of food has been preventing the vulture species from restoration. Thus with the continuation of awareness and advocacy on discouraging use of toxic NSAIDs, provisioning of safe food to vultures also needs to be encouraged. Moreover, among four critically endangered vulture species in Nepal, very little information is known about feeding and breeding ecology of red headed vulture *Sacrogyps calvus* and also the reason for its decline is unknown yet. Less availability of food, secondary poisoning and electrocution might have been causing decline of this species therefore detail study on feeding and breeding ecology as well as conservation actions are needed to protect this species from extinction in Nepal.

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?

One thousand copies of posters (A2 size) having the message "stopping the use of diclofenac as well as other toxic drugs for the conservation of vultures" and 100 t-shirts having the message "let's help to conserve vultures" were printed using The Rufford Foundation logo and they were distributed in project area. The Rufford Foundation logo was used in all the presentations and banners that were used during project implementation. Moreover, the publicity of The Rufford Foundation was made through radio program named "vulture program" which continued from January to June 2017.

11. Any other comments?

We would like to thank Rufford Small Grants Foundation for providing financial support to implement this project for the conservation of critically endangered vultures in Nepal. Likely, we would also like to thank Nepal Para-veterinary and Livestock Association and its district committees in project districts and respective District Livestock Service Offices in project districts.