

Final Project Evaluation Report

| Your Details | |
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| Full Name | Karuna Karki |
| Project Title | Determinants Of Spatial And Temporal Patterns Of Human-Snow Leopard Conflict In Nepal-II |
| Application ID | 24457-2 |
| Grant Amount | £4,999 |
| Email Address | Karkikaruna08@Gmail.Com |
| Date of this Report | Feb 17, 2019 |

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 |
|--|--------------|--------------------|----------------|--|
| Identify the villages affected by livestock depredation by the snow leopard in lower Mustang Area. | | | | From the consultation with the Annapurna Conservation Area and focus group discussion with local community, we identified 10 villages from lower mustang area affected by snow leopard depredation. These villages are Jhong, Putak, Chingur, Khinga, Jharkot, Lubra, Dhakarjong, Pangling, Falyak and Kagbeni. |
| Identify the determinants of human-snow leopard conflict | | | | We have recorded total livestock lost at household level for last 3 years (September 2015- September 2018) for 160 households. Data are being analysed to understand the impact of different factors (e.g., herding practice, herd size) on household level loss of livestock to snow leopard. We are also analysing data to understand why certain villages/pasture are predisposed to greater livestock depredation using Generalised Linear Models (GLMs) |
| Assess human perception and understanding of human-snow leopard conflict | | | | We conducted interview surveys with the livestock owners/herders in 10 village settlements using semi-structured questionnaire forms to quantify the actual livestock lost to snow leopard for last 3 years, and to examine their attitudes towards snow leopard conservation. A total of 160 respondents were interviewed. Data are being analysed to examine the relative influence of different socio-economic factors (age, sex, education, herd size, livelihood options), and other factors (experience of livestock depredation) on determining the attitude towards snow leopard conservation. |
| Conduct local awareness program on | | | | We designed a poster, cap, key ring that portrays conservation message |

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| <p>snow leopard conservation</p> | | | | <p>about snow leopard. We distributed 300 copies of posters, 25 caps and 170 key rings with conservation message to local herders, local people, students, youth clubs and local organisations during all the community outreach programme.</p> <p>Herder workshop was conducted in a small group of herder and personal interaction basis both in previous project (upper mustang) area and present project area (lower mustang) to sensitise about importance of snow leopard, its conservation and compensation procedure.</p> <p>As our previous project showed females had more negative attitude towards snow leopard so we focused our awareness programme for women and conducted small interaction programme with the local women in both previous and present project area.</p> <p>We also had an interaction as well as awareness programme with the conservation management committee (CMC) from both the project areas discussing the present scenario of human-snow leopard conflict, compensations status, mitigation measures and the others programme that CMC has been doing to conservation of snow leopard at local level.</p> |
| <p>Conduct awareness program on snow leopard conservation to citizen scientists</p> | | | | <p>As a part of snow leopard scout programme, we conducted a workshop to the students from school and Buddhist monastery discussing the importance of snow leopard conservation, field techniques and conflict with humans.</p> <p>We also had documentary show about the different works done on snow leopard in past from different part of Nepal, India to the young citizen scientists.</p> |
| <p>Mapping hotspots</p> | | | | <p>GPS locations of the kill site by snow leopard within the village, in and around the pasture area were also</p> |

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| | | | | collected and based on these points conflict hotspots are being mapped. |
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2. Please explain any unforeseen difficulties that arose during the project and how these were tackled.

Working in high mountain terrain always comes with unseen difficulties no matter how much we prepare learning from the past experiences. Since our study area was very remote area with difficult terrain, we had to postpone field work due to heavy snowfall. At the beginning of project during February 2017 to early May, we faced some challenges in collecting data and conducting awareness campaign due to unavailability of people in village settlements as they migrate from high elevation settlements to low elevation settlements to escape winter. We had to postpone and cancel our fieldwork many times during July due to bad weather as the roads were affected due to rain, landslides and faced some problem in transportation due to the difficult terrain. However, we completed the field work within the time period of the project.

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

- a. We quantified actual livestock lost to snow leopards by 160 households in 10 settlements in 3 years (September 2015-September 2018), which helped us to figure out the settlements that are more vulnerable to livestock depredation by snow leopard. We examined the livestock herding practices and ecological factors (elevation and terrain ruggedness) that are more likely to determine the variation in magnitude of livestock loss across settlements. These results have helped us to identify most conflict/depredation risk prone villages and plan mitigation measures to reduce further depredation.
- b. We examined factors affecting the attitude of 160 individuals/herders towards snow leopard conservation, which helped us to understand what socio-economic factors are likely to result in negative attitude towards snow leopard conservation. Identification of those factors have helped to plan what characteristics of respondents (herders) need more immediate attention for conservation education programme. Even from our past results as female had more negative attitude we focused local women more in our awareness activities. We conducted awareness in both past project area (upper Mustang) and present area (lower Mustang).
- c. We sensitised 93 students from the school and the 22 students Buddhist monastery about the importance of snow leopard conservation. We also sensitised 38 local herders/livestock owner from both upper and lower mustang area about the importance of snow leopard conservation with personal interaction, 13 herders about better livestock guarding measures and the official process to be followed to get compensation from government for livestock loss. We conducted two women group interaction as well as awareness programme focusing on snow leopard conservation to change their attitude towards snow leopard. All together 24 women were involved in this interaction. We also had two conservation management

committee (CMC) interaction discussing the present scenario of human snow leopard conflict, compensation status, mitigation measures and the others program that CMC has been doing to conservation of snow leopard at local level.

This greatly helped us in reaching out there in field, understand livestock depredation problems, their attitude, their experience, what they have been doing and what we can do together to help them peacefully coexist with snow leopard and other wildlife.

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

Throughout the fieldwork, we had three local research assistants at different locations who greatly helped us in collecting both household level livestock loss and socio-economic data. We also had close interaction and communication with settlement's leaders and herders. We convened three focus group discussions in village settlements, where we discussed about the objectives of our project, and the ways it could benefit them by providing scientific evidences to mitigate livestock depredation. In most of the settlements, herders even didn't know about the wildlife damage compensation scheme of the Government of Nepal. We sensitised them about the procedures one needs to follow to get compensation for livestock loss from the protected area management authority. Herders greatly appreciated this work. This time we focused more on awareness activities to local people so involvement of local communities was quite good. A total of 98 local students and teachers, and 22 students from Buddhist monastery participated in documentary show, interaction programme, which we hope helped build the plight of snow leopard conservation. Local community were also involved in focused group discussion, field survey, herder interaction programme, women interaction programme as well as conservation management committee interaction programme. Without involvement and interest of local community, successful completion of this project would have been impossible.

5. Are there any plans to continue this work?

Working with local communities of the upper and lower Mustang Landscape for over 2 years has helped us understand the root causes of problems surrounding snow leopard conservation. While our two projects have helped us understand the patterns of livestock by snow leopard and local communities' attitudes towards snow leopard conservation, our work remain unable to practically address the problems. Our previous projects just collected the evidence base to develop conservation measures, and helped raised conservation awareness. What is now needed is a practical measure such as improved corral/pen to prevent snow leopard attack on livestock and a long-term support measure for compensation from local protected area authority. We plan to continue working with local protected area authority (Annapurna Conservation Area) and local village councils to help local communities coexist with snow leopard. We particularly want to leverage funds from local village council to help build improved corrals for livestock herders.

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

We had participated in conference on Student Conference on Conservation Science (SCCS), Bengaluru, India in September 2018 where we shared a few of our works from past and present project. We also presented in Rufford Small Grant Conference and hope to present in upcoming conference too. Our detailed technical report is ready (which is under preparation), we will share it with different stakeholders including the Department of National Parks and Wildlife Conservation, Annapurna Conservation Area Project. We are writing research manuscripts based on the findings of this project, which we plan to submit to peer reviewed journals for publication. We also plan to attend the upcoming conference on Student Conference on Conservation Science (SCCS). We will acknowledge the funding received from the Rufford Foundation in our all publications, and results sharing meetings, conferences and workshops. The findings of the project will also be shared to the forest department and conservation area managers, local institutions working for snow leopard conservation and related authorities.

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

The approved project duration was January 2018- January 2019. The grant was used over this period.

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 |
|---|-----------------|---------------|------------|---|
| Field equipment (camera) | £400 | £450 | +£50 | Price was little higher than what we estimated. |
| Travel (Bus and jeep Kathmandu-Pokhara-Mustang 2 way | £442 | £390 | -£52 | All the time we visited there we could get the flight because of bad weather so we took bus and hire jeep so it costs £ 52 less than what we estimated. |
| Jeep hiring = 71/day * 2 days = 142 | £142 | £142 | | |
| Horse hiring during field work = 15.5/day/horse *5 days*2 horse=155 | £155 | £155 | | |
| Accommodation for research | £1050 | £1050 | | |

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| team (3 person for 70 days @ £5/day) | | | | |
| Food for research team (3 person for 70 days @ £6/ day) | £1260 | £1260 | | |
| Wages to local guides (2 person for 40 days @ £8/day) | £640 | £640 | | |
| Posters and pamphlets, stickers for awareness campaign (key ring, cap, posters) | £210 | £210 | | |
| Focus group discussions, herders meeting, stakeholders meeting and so on | £100 | £100 | | |
| Scout / citizen scientist group sensitization | £100 | £100 | | |
| Outreach activity, workshop(women , herder, local people and CMC) | £150 | £172 | +22 | The difference was due to we conducted 2 more awareness interaction program than we planned. |
| Stationary, data forms, field maps, questionnaire | £150 | £150 | | |
| Communication and internet | £100 | £80 | -20 | The difference was due good coordination as communication costs £ 20 less than we expected. |
| Result dissemination by organizing workshop | £100 | £100 | | |
| Total | £4999 | £4999 | | |

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

The most important next step would be awareness among local people and motivate them towards conservation because the herders and local people are the direct victim of the livestock depredation as their livelihood depends on the livestock rearing and they are the one who share the same space with snow leopard and they are the one who decide whether to conserve or endanger the snow leopard from the mountains.

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?

We have used the Rufford Foundation logo on poster/pamphlets, banner, cap, key ring developed for conservation awareness and on the banner of mini-workshops conducted for herders, citizen scientist group interaction banner, women group interaction program banner, conservation management committee interaction programme banner.

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

Team Leader: **Karuna Karki**

The role of Karuna was in planning and managing all the field works, preparing the field gears and awareness materials. She was also involved in conducting focus group discussion and collecting field data. She was also involved in conducting awareness activities and interaction program. She was also involved in data management and data analysis and all the technical report work.

Dhan Kumari Gurung:

She was involved in the management and planning of the field works. She was involved in collecting the field data. She was involved in collaborating and managing for the awareness program and interaction program with the local community, with school management committee, conservation management committee. She was also involved in collecting secondary information. She is also involved in data management.

Niraj Thakali:

He was involved in management and coordinating with the local people in field works as he was local inhabitant. His role was facilitating in the field work, guiding the field routes, making contacts in the study sites and planning the conservation awareness activities and interaction program. With his valuable suggestion and guidance about the local situation and condition we could make this project successful.

12. Any other comments?

We thank the Rufford Foundation for funding this project. We aim to continue working for snow leopard conservation in this region and we hope for similar support in the future as well.









