

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

Your name	Roshan P Rai
Project title	'Community-based mitigation of human-wildlife conflict around the Singalila National Park, India'
RSG reference	13153-2
Reporting period	May 2013 to July 2014
Amount of grant	£5945
Your email address	darjeelingprerna@gmail.com rairoshan@gmail.com
Date of this report	25th September 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
1. Advocate for the recognition of HWC in SNP in the conservation discourse.		√		HWC in the mountain context still does not occupy the same spaces that megafauna do so even though there has been increasing recognition of HWC in the mountains, the animals involved in HWC are yet to be listed a 'problem animals.
Develop an action plan with the Darjeeling Singalila Sangrathan Samity (Conservation Association) to document HWC on a daily basis over a period of 1 year to understand the extent and dynamics of HWC in the SNP fringe villages.			√	All five villages: Samanden, Dara Gaon, Bich Gaon, Gurdum and Namla forest villages, nominated a representative who collected HWC data of the village on a daily basis.
Collect secondary data about patterns and causes at landscape level.		√		A number of publications have come out in the recent times but are limited to the plains and species oriented and does not delve at a landscape level.
Prepare a HWC map for the project sites.			√	A base map was developed at the initial meetings and on that monthly HWC map was superimposed to give a yearly HWC patterns, flows and vulnerabilities of each village.
Build strategic networks at the Kunchenjunga Landscape with like-minded organisation to build a critical mass advocating for HWC redress		√		DLR Prerna built strategic partnership with WWF India, Kunchenjunga Landscape Programme and undertook cross learning visits, technical assistance and joint workshops, papers advocating the issue of mountain HWC. DLR Prerna partnered with Ashoka Trust for Research in Ecology and Environment Eastern Himalaya Office in expanding the HWC data collection to 11 forest villages in Singalila National Park.
Advocate for recognition of HWC in mountainous regions and subsequent redress with compensation as a short-term measure by sharing information collected at		√		The issue of HWC with data from the project was filed at the West Bengal Fact Finding Commission on Environment (Non-Official) North Bengal Bench 12 October 2012 – Siliguri as Case No: 15/2012 Ref: WBFFC/CCO/2012/15/25.

strategic platforms			<p>The bench has responded favourably to the case but has asked for further data from DLR Prerna and the Forest Department.</p> <p>DLR Prerna took the lead in writing and presenting the paper on Darjeeling, <i>'Forest of Darjeeling – a need for intersectoral, participatory and transboundary management'</i> for Sustainable Mountain Development Summit 3, Kohima, Nagaland, Indian Mountain Initiative and incorporated a section on HWC in the paper. The IMI is a collective of 11 mountains states and two Districts of Darjeeling and North Chachar Hills with elected representatives, bureaucrats and civil society present at the summit. In Summit 2 DLR Prerna and WWF India had a joint paper on HWC.</p> <p>DLR Prerna and partners advocated the issue of mountain HWC in various platforms including Kanchenjunga Landscape Conservation and Development Initiative.</p> <p>WWF India and DLR Prerna organised a workshop on 'Stakeholders' Consultation on Challenges for Human Wildlife Conflict in Sikkim and Darjeeling Himalaya' and brought in a number of stakeholders including community representatives, Forest, Agri-horticulture, Rural Departments and civil society to reflect and plan to address HWC.</p> <p>WWF India and DLR Prerna facilitated two communities in Sikkim to propose HWC management interventions to include as work within the Mahatma Gandhi National Rural Employment Guarantee Act Scheme.</p> <p>These activities especially government linkages are limited in the Darjeeling Hills due to the challenging political climate as well as Darjeeling is a district with powers mostly in Kolkota, capital of West Bengal.</p>
Advocate for more participatory management systems	√		Participatory management systems in its truest sense is juxtaposed to existing management systems thus was a difficult issue to advocate.

<p>2. Initiate community-based initiatives to reduce impacts of human wildlife conflict.</p>		<p>✓</p>		<p>Community-based initiatives have been started in all the five villages, but it is yet to cover the entire stretch of the villages within the existing resources and timeline.</p>
<p>Organise series of community consultations to share lessons learnt of the pilot and discuss possibilities of bio-fence and alternate crops not damaged by the wild animals.</p>			<p>✓</p>	<p>Constantly facilitated.</p>
<p>Organise policy level interactions with the Forest Department for feasibility, acceptance and partnership/ownership as well as leveraging support.</p>		<p>✓</p>		<p>Regular reporting was done with the Forest Department as well as personal visits to key officials were undertaken regularly to highlight project activities as a way of advocacy and leverage. Based on these initiatives, the Forest Department provided support to extract sustainably vegetative stock from the forest for bio-fences.</p> <p>These linkages are at a mid-management level and does not necessarily reach policy debates easily.</p>
<p>Identify and work with progressive villagers of five villages to initiate bio-fence as a means of learning by doing for the community.</p>		<p>✓</p>		<p>Progressive villagers were key in ensuring the limited project resource was made best use to develop bio-fence. Each village undertook bio-fence in a different ways which include providing for half wage rate for people who had to go to the forest to collect plant material, a picnic for the community on the days of planting, every household coming out with at least one adult member for strengthening the bio-fence and voluntary service. This has meant that in the five villages at least double the length and size of bio-fences were built within the resource available. Bio-fence for human wildlife mitigation (HWC) in the five forest villages (FV) were evaluated in November 2013 and they measure: Namla FV, 550 m; Gurdum FV, 850 m; Bich-Gaon FV, 550 m; Dara-Gaon FV, 800 m and Samanden FV, 600 m. The bio-fences have an average survival rate of 70%. 5000 tea saplings were added as one of the species of bio-fence which is not damaged by animals.</p> <p>Tea seeds have been put in germination-pits for strengthening the bio-fences in</p>

			<p>the next planting season.</p> <p>The bio-fences were prioritised in the most vulnerable areas and will take a number of planting seasons before it gets well built up as well as connecting the entire village.</p>
<p>Enhance capacity of the community to grow alternate crops which are not destroyed by wild animals as well as provide start-ups and market linkages.</p>		√	<p><i>Chirrata</i> (<i>Swertia chirata</i>) a crop not affected by wildlife and with a high medicinal market value has been successfully planted in Samanden enabling communities to experience crop alternatives. Other forest villages have also planted <i>Chirrata</i> at an experimental level.</p> <p>Tea also provides a livelihood option for handmade tea with reduction in need to buy tea which is consumed constantly in the Darjeeling Hills. Nurseries were set up for 96 kg of tea seeds in the five villages for further expansion.</p> <p>Likewise, <i>Uwa</i>, naked barley, 125 kg and two types of local soya bean seeds 30 kg were introduced in the communities as a means of diversification of livelihoods.</p> <p>The production levels and remote nature makes market linkages challenging.</p>
<p>Document the information collected, experiences and lessons learnt and share with relevant Stakeholders.</p>		√	<p>Data was generated daily which the basis of the papers and report was mentioned above.</p>

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

The renewal of the Gorkhaland movement (for regional autonomy) in the Darjeeling Hills meant strikes for the major part of August 2013 with complete closure of the Darjeeling Hills. Thus most activities planned for the month could not be implemented as well as post strikes the additional challenge was to revisit and rebuild the momentum of the project from where we left before the strikes were called. This was done with extra effort and doubling of community interventions. Luckily the main planting time of June and July was over which enabled the planting of the bio-fences. The timing of the strikes disturbed expansion of alternate crops.

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

i. Understanding HWC

The mapping and daily data collection of HWC in Samanden, Dara Gaon, Bich Gaon, Gurdum and Namla forest villages in the fringes of Singalila National Park, Darjeeling broadened the

understanding of the intensity of HWC. This was an important aspect of the project as the pilot data was not accepted as representative spread of villages. The process enabled communities to address the issue of perceived loss and real loss and quantify their loss. It also enabled to look at the loss in a disaggregated perspective of seasons, vulnerable areas, flows and patterns all essential to plan management strategies.

ii. Community based mitigation and management of HWC

The pilot project at Samanden provided insights into the efficacy of bio-fences and alternate cropping to mitigate and manage HWC. This was expanded to the other four communities while Samanden further strengthened their bio-fence. The forest department was leveraged, and their support was seen in the permission to sustainably extract vegetative stock from the forest for biofences. A list of species for the bio-fence emerged from each village consultations, with the species of the bio-fence to have functions of warding of animals, fodder source, soil conservation, diversification of livelihoods and biodiversity values of connectivity. Tea was introduced as one of the species as it is not eaten by any of the animals in the conflict as well as it provides additional livelihood options. Working with limited resources meant prioritising bio-fences in most vulnerable zones of the village that emerged out of the mapping exercises. This process strengthened community decision making processes, optimum resource utilization and communities evolved site specific strategies for bio-fences. In 2013-14, five villages in Singalila National Park, Darjeeling fringe were given Indian Rupees 8000 and 1000 tea saplings each to strengthen their bio-fences. This exercise brought about process as well as product innovation where communities figured out how best they could maximize the resource opportunity. 3350 m of bio-fence with a survival rate of 70% at the end of one year was built. Each village undertook bio-fence in a different ways which include providing for half wage rate for people who had to go to the forest to collect plant material, a picnic for the community on the days of planting, every household coming out with at least one adult member for strengthening the bio-fence and voluntary service. This has meant that in the five villages at least double the length and size of bio-fences were built within the resource available.

Tea and the nurseries including naked barley and soya bean that were introduced looking at crop diversification. Tea as a crop is not destroyed by wildlife and has become a component of bio-fence as well as an additional livelihood option. Likewise, Chirrata (*Swertia Chirrata*) a medicinal plant not affected by wildlife and with a high medicinal market value was introduced in Samanden from a few families to the larger community diversified livelihood base. Chirrata has spread to the other four villages too as an initial experimental phase. Chirrata is a relatively easy crop to grow and is grown on the sides of terraces which meant the growing space in the land is expanded. Forest department was leveraged to ensure legality of the crop as not extracted from the wild.

iii. Advocating HWC at a larger platform

HWC discourse is predominantly megafauna and plains centric making research and advocacy an important component for mountain HWC to be acknowledged and addressed. Community-based research empowers the community as well as enables a depth in data collection which is rather impossible for a visiting researcher. This data was the basis to advocate for redress of mountain HWC as the pilot project data from a single village was questioned for its validity in extrapolation.

The issue of HWC using the data from the pilot project from Samanden Forest Village only was filed at the West Bengal Fact Finding Commission on Environment (Non-Judiciary) North Bengal Bench 12 October 2012 – Siliguri as Case No: 15/2012 Ref: WBFFC/CCO/2012/15/25. The bench has responded favourably to the case but has asked for further data from DLR Prerna and the Forest Department.

DLR Prerna took the lead in writing and presenting the paper on Darjeeling, *'Forest of Darjeeling – a need for intersectoral, participatory and transboundary management'* for Sustainable Mountain Development Summit 3, Kohima, Nagaland, Indian Mountain Initiative and incorporated a section on HWC in the paper. The IMI is a collective of 11 mountain states and two Districts of Darjeeling and North Chachar Hills with elected representatives, bureaucrats and civil society present at the summit. In Summit 2, DLR Prerna and WWF India had a joint paper on challenges of HWC in the Darjeeling Sikkim Himalaya. As a follow-up from Summit 2, the team met Mr. B. M. S. Rathore Joint Secretary, Ministry of Environment and Forests again and updated him on the continuing concerns of HWC.

DLR Prerna and partners advocated the issue of mountain HWC in various platforms including Kanchenjunga Landscape Conservation and Development Initiative.

WWF India and DLR Prerna organised a workshop on 'Stakeholders' Consultation on Challenges for Human Wildlife Conflict in Sikkim and Darjeeling Himalaya' and brought in a number of stakeholders including community representatives, Forest, Agri-horticulture, Rural Departments and civil society to reflect and plan to address HWC.

WWF India and DLR Prerna facilitated two communities in Sikkim to propose HWC management interventions to include as work within the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) has redefined employment guarantee and community asset building in India. Taking this opportunity, community dialogues in Utteray and Ribdi villages bordering Barsey Rhododendron Sanctuary, Sikkim brought about the enlistment of fencing and bio-fencing as activities under (MGNREGA). This process brought into focus HWC within the gamut of Panchayati Raj Institution, local rural self governance, which predominantly talks about rural development and does not always engage with conservation especially in Sikkim and Darjeeling. At a community level, the process expanded the resource scope of asset building and development needs and priorities. At the state level HWC went beyond the discussion boundaries of the forest department and conservation organisations to initiate a much-needed diversification of stakeholders for interventions. This intervention is of significance to Darjeeling as the process will set a precedence which can be leveraged for similar action in Darjeeling. The team has been engaging with the Forest Department and Executive Director, MGNREGA and both are in agreement, but the convergence has not borne fruition.

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

The project revolves around action around communities. The data collection and mapping revolved around communities taking initiatives to decide the mapping process as well as selecting a representative in charge of collecting HWC data daily. Community based research empowers the community in reflection upon themselves as well as the process is not extractive. The process also enabled them to have authentic data to talk about in larger platforms. The research also enabled the community map out flows and patterns of HWC and demarcate vulnerable zones in the village. This exercise brought about the judicious use of limited resources to take up mitigation measures.

Strengthening and developing bio-fences was one of the key interventions in the project. Community decisions on the use of resources available for bio-fence brought about process as well as product innovation. Various interventions possibilities were implemented and all of them revolved around volunteerism and ensuring that the bio-fence developed was way more than the resource available.

The process strengthened community relationships and volunteerism. The efficacy of the bio-fences is being felt even though the bio-fences do not cover the entire length of the village with community representatives expressing that the limited bio-fence is reducing wildlife raids. The addition of tea to the bio-fence diversifies livelihood options besides warding off animals as tea is not destroyed by any animal involved in HWC. A number of species was used in the bio-fence and some of them are important fodder species. The bio-fence also provides soil conservation measures and biodiversity values.

The exploration of *Chirrata* a medicinal plant as an alternate crop that is not raided by wildlife as well as having a good market value has provided insights into preventive diversification of agriculture. *Chirrata* is also grown on terrace edges expanding the limited growing area of the village.

Thus, the interventions have addressed issues of understanding HWC by the community as well as developed mitigation measures of bio-fences and alternate crops that are not raided by animals. The data generated also was used to advocate the need to address the issue of mountain HWC at key platforms. This process has brought about a certain acceptance of the issue by the Forest Department which is the first step towards policy changes to address it. The advocacy process was also done in partnership with a number of other NGOs presenting a combined front.

5. Are there any plans to continue this work?

There is a need to continue this work as the necessary policy changes have yet to take place. Likewise, the community interventions of bio-fence, crop alternatives and linkages are at initial stages and have yet to bear full fruition. We are in the process of developing a proposal to continue the work. Besides the proposal we will continue to work in partnership with WWF India and ATREE to continue this work.

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

The data and the intervention measures to mitigate HWC has been used to develop cases and papers that are being presented in various platforms. The reports of the project process have been constantly shared with the forest department. We are in the process of combining the case within the large Darjeeling Sikkim landscape as policy interventions are essential.

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 report covers a period of May 2013 to July 2014 but since there was gap between the pilot and 2nd grant, the community representative continued to collect data on HWC outside of the project period. Likewise, now that the 2nd grant is over, all the representatives of the five villages have volunteered to continue monitoring HWC. A number of advocacy activities like the non-judicial case and the workshop are outside of the project period but are critical to the objectives of the project.

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.

Objective/Activity	Budgeted Amount (£)	Actual Expenses (£)	Difference	Comment
Program Cost				
Advocate for the recognition of HWC in SNP in the conservation discourse.				
Conduct surveys in collaboration with Darjeeling Singalila <i>Sangranchan Samity</i> for primary data collection to understand the extent and dynamics of HWC in the SNP fringe villages.	400	400	-	-
Collect secondary data from experts, forest department and literature about patterns and causes at landscape level.	250	250	-	-
Prepare a HWC map for the project site	200	200	-	-
Build strategic networks at the Kunchenjunga Landscape with like-minded organisation to build a critical mass advocating for HWC redress	150	150	-	-
Advocate for recognition of HWC in mountainous regions and subsequent redress with compensation as a short-term measure by sharing information collected at strategic platforms	200	200	-	-
Subtotal	1200	1200	-	-
Initiate community-based initiatives to reduce impacts of human wildlife conflict.				
Organise series of community consultations to share lessons learnt of the pilot and discuss possibilities of bio-fence and alternate crops not damaged by the wild animals.	750	750	-	-
Identify and work with progressive villagers of five villages to initiate bio-fence and grow alternative corps	2200	2200	-	-
Document the information collected, experiences and lessons learnt and share with relevant stakeholders.	100	100	-	-
Subtotal	3050	3050	-	-
Program Support costs				
Professional Service costs				
Project Co-ordinator honorarium	445	445	-	-
Field Assistants 1 * 15 mths @ 25	375	375	-	-
Subtotal	820	820	-	-
Daily sustenance and travel				

Land travel for project personnel	250	250	272	Difference occurs due to conversion rates and was utilised under this budget heads
Sustenance during travel	200	200	-	-
Subtotal	450	450	-	-
Communication and Reporting				
Communication	-	-	-	-
Stationery	-	-	-	-
Subtotal	-	-	-	-
Total Program Costs (A)	4250	4250	-	-
Overhead 10% of program costs (A)	425	425	-	-
Total Program Support Costs (B)	1270	1270	-	-
Grand total (A+B)	5945	5945	-	-

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

- i. Strengthen bio-fence in the five villages and ensure that the entire boundary and not just the most vulnerable areas are covered will ensure that the efficacy of the bio-fence can be completely measured. This will enable the larger landscape to look into bio-fences as a management intervention for HWC.
- ii. Diversify livelihood options and alternate crops that are not destroyed by wild animals are important interventions for community adaptations towards managing HWC. This diversified livelihood options linked to the market addresses larger issues of economic security of the communities affected by HWC and continue as stewards of conservation.
- iii. Landscape level monitoring of HWC is essential for policy changes as well as innovating for management as the issue looks to continue in the years to come and has to be addressed at a landscape level which goes beyond affected community interventions to look into issues of forest changes, population ecology, access and benefit sharing and policy changes.

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?

In all our written material the foundation has been acknowledged for their support and the logo has been used including our DLR Prerna Annual Reports. This has ensured publicity of Rufford in our action. Community interventions also acknowledge the support of Rufford.