

Final Evaluation Report

Your Details	
Full Name	Akashdeep Roy
Project Title	Understanding the construction of human-wildlife conflict through a political ecology framework in the North Bengal region, India
Application ID	38166-1
Date of this Report	20.April.2024

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
Data collection to run RCT to know the efficacy of energized fence	-	-	Yes	Questionnaire surveys (N=400) in forest fringes of four wildlife divisions across three different strata – treatment, control, and spillover.
Interviews and FGDs (both local and elite)	-	-	Yes	Learnt the decision-making process and governance related to energised fence and rice beer
Camera trapping	-	-	Yes	Captured elephant (and other large mammal) and human behaviour around energised fences.

2. Describe the three most important outcomes of your project.

a). The research team recorded a substantial spillover effect due to linear energised fences. Some villages (with energised fence) are better protected from elephant attacks, while the neighbouring villages (without energised fence) become more vulnerable. In other words, human-elephant conflict gets 'shifted' and not 'mitigated' due to energised fences. The project also guided the Forest Department to carefully place energised fence while focusing on such spillover effects and elephant's right to passage.

b). The availability of funds and political power influences the decision to erect energised fences. The Joint Forest Management Committees (JFMCs) receive 40% of the total revenue generated by any wildlife division, and the money allotted is proportional to the number of registered individuals in a JFMC. Therefore, the bigger the JFMC, the larger the funds and the longer the energised fence will be. The Forest Department allows such community infrastructure to reduce capital and human resources in tackling human-elephant conflict.

c). The presence/production of rice beer in commercial quantities is a significant pull factor that directly increases human-elephant conflict. There is a check on the commercial production of rice beer by the State Excise Department, but there's

hardly any coordination with the Forest Department. In other words, commercial quantities of rice beer are problematic for both departments. Still, the forest department doesn't consider it important to address this issue as the rice beer production sites are outside protected areas. There's poor communication between neighbouring wildlife divisions and with other stakeholders regarding encroachment of historical elephant corridors. A third-party intervention to anchor all stakeholders is the need of the hour.

3. Explain any unforeseen difficulties that arose during the project and how these were tackled.

The project aimed to collect conflict data for three seasons (2021-2023), and most of the data collection was completed by September 2023. However, for the final paddy season, i.e., September-December 2023, those respondents had to be revisited or contacted over mobile phones. Most mobile phones were out of service and had to be contacted through a known neighbour or revisited by a research team. This increased the fuel cost and overall time. Apart from this, all other activities were completed in time.

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

The villagers were grouped into various Joint Forest Management Committees (JFMCs). A few smaller JFMCs and tea garden labour unions (falling outside JFMC jurisdiction) informed about the spillover effect due to the treatment in bigger JFMCs. We conducted FGD with this group of people to find the best possible alternate route for the elephants and communicated the findings with senior officers of the Forest Department. With the limited time and funds, this project could suggest changes only in the Nimati-Chilapata corridor connecting Buxa Tiger Reserve and Jaldapara National Park. These changes are included in the forest department's next working plan. Moreover, the field collaborators listed under section 9 also received income from daily wages, hired vehicle rentals, or weekly field assistantships.

5. Are there any plans to continue this work?

Yes, the project visualizes a second phase soon. In the second phase, the researchers and field collaborators will propose action research in the same landscape. Then, the other elephant corridors (N=7) facing unplanned energised fence problem will be targeted to reinstate the historical elephant corridors. The future project will propose 'human-free' elephant corridors to reduce the human-elephant conflict in smaller JFMCs and tea gardens.

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

The lead researcher has already shared a technical report with the Chief Conservator of Forests and the Field Director of Buxa Tiger Reserve. The report

identifies flaws in the energised fence network in the historical elephant corridors and suggests alternate routes for elephants. Moreover, six focus group discussions and two multi-interest group workshops were conducted to disseminate the research findings to various stakeholders. The conversation revolved around the decision-making and governance of energised fences and rice beer and how we can attain the socio-ecological goals by employing science and community involvement.

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

The north Bengal landscape has 18 elephant corridors, and our team has identified massive stretches of energised fences along eight such corridors. Some of the energised fences are perpendicularly blocking the elephant routes. After suggesting corrections in one elephant corridor (i.e., Nimati-Chilapata corridor), our team and the field collaborators aim to correct the remaining seven elephant corridors. Here, correction refers to the zero-spillover effect from the energised fence to the neighbouring human settlements. This would help to attain the dual objective of wildlife conservation and rural development.

8. 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?

The Rufford Foundation logo has not been used as the lead researcher has just moved back to the institute, i.e., IISER Pune, after the fieldwork. However, during elite interviews with the senior forest officers, politicians, and social activists, the support from The Rufford Foundation was mentioned formally. Further, the junior researchers/research interns were illuminated and trained about research grants and funding agencies and their role in mitigating human-wildlife conflict or promoting wildlife conservation.

With future research publications, seminars, conferences, and subsequent coverage in the news media, the contributing role of The Rufford Foundation will be duly highlighted.

9. Provide a full list of all the members of your team and their role in the project.

- a. Akashdeep Roy – Project leader.
- b. Arnaz Dholakia – Remote research assistant; assisted in preparing maps.
- c. Aritri Chatterjee – Research intern; assisted in data collection through questionnaire.
- d. Moubani Sarkar - Research intern; assisted in data collection through questionnaire.
- e. Sahil Das - Research intern; assisted in data collection through questionnaire, camera traps.
- f. Purba Paul – Research intern; assisted in interviews transcription.
- g. Purna Paul - Research intern; assisted in interviews transcription.

- h. Mintu Roy – Field collaborator; assisted as a vehicle driver, key respondent, and survey planner.
- i. Ranjit Kharia - Field collaborator; assisted as a key respondent and survey planner. He mostly helped in the rice beer component of the project and shortcuts through the forested areas.
- j. Ramesh Mohali – Field collaborator; assisted with camera trapping.
- k. Subhendhu Bikash Roy – Field collaborator; assisted with vehicle and accommodation. He also introduced us to the forest department officials, tea garden management, and other key respondents.
- l. Dr Shalini Sharma – PhD project supervisor.
- m. Dr Sharacchandra (Sharad) Lele – A member of this project's Research Advisory Committee, visited the field in January 2024 and suggested minor modifications.

10. Any other comments?

Our small team believes this is the first step to understanding elephant behaviour around energised fences. After collecting the baseline data, it's easier for the research team to guide policymakers to take the steps needed to build a network of energised fences to reduce human-nonhuman overlap. The Forest Department, being the most significant stakeholder, has shown massive interest in this study also appeals for a second phase in the coming months.

Our team also found a case of a hybrid of pole-less fencing and hanging fencing in Moiradanga beat of the Jaladapara National Park's West Range. Elephants usually target the iron/wooden pole to breach the energised fence. Mr Rafikul Islam, a forest guard, invented a new method to 'contain' elephants inside the forest. He used the big trees at 30-40 m (instead of poles) and hung them using another tree. This model of energised fence recorded the highest efficacy among linear fences. Please note that the higher the efficacy, the higher the spillover effect. In the multi-interest group workshops, our team also suggested that "no energised fence is better than poorly planned energised fence network".

I believe that buying a used vehicle, instead of renting it daily, not only saves money in the longer term but also gives more liberty and freedom to plan the fieldwork by not depending on the vehicle owner and the driver. I'll raise grants to buy a used/new field vehicle for the subsequent phases in North Bengal.