Final Evaluation Report

We ask all grant recipients to complete a project evaluation that helps us to gauge the success of your project. This must be sent in **MS Word and not PDF 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 – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please DO NOT fill in and submit this form until the project has been completed.

Complete the form in English. Note that the information may be edited before posting on our website.

Please email this report to jane@rufford.org.

Your Details	
Full Name	Suraj Upadhaya
Project Title	Conflict in the Paradise: Balancing Conservation and Cordyceps-Based Livelihoods in the Himalayas
Application ID	40830-B
Date of this Report	30-October 2025

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
Understand the conflict between Cordyceps-based livelihoods and biodiversity conservation			✓	All major objectives were fully achieved. The project successfully combined quantitative and qualitative approaches to identify stakeholder perspectives on Cordyceps harvesting in Dolpa, Nepal. Field surveys (conducted with 468 respondents) and interviews with community leaders (6), traders (4), local officials (2), and local harvesters (22) provided a multi-level understanding of the livelihood–conservation conflict. The resulting peer-reviewed paper in *Sustainability Science* (Upadhaya et al., 2025) and outreach through symposium, conference presentations met the dissemination goals. Minor logistical challenges due to remote terrain and financial rules were managed effectively.
Identify socio-economic, ecological, and governance drivers of Cordyceps harvesting			✓	
Disseminate findings via peer-reviewed publication and public outreach			✓	

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

a) **Integrating Divergent Stakeholder Perspectives for Sustainable High-Altitude Management:** The project generated the first systematic, data-driven understanding of how different stakeholder groups in the Dolpa region perceive the relationship between Cordyceps harvesting and biodiversity conservation. Using Q-methodology, interviews, and household surveys (468 respondents), the study revealed four distinct viewpoints: community-centered, government-oriented, profit-oriented, and conservation-oriented. This nuanced classification helps policymakers and conservation practitioners anticipate potential conflicts, identify leverage points for collaboration, and design adaptive management strategies. The findings were peer-reviewed and published in Sustainability Science (Upadhaya, Poudyal & Tumpach, 2025), providing a scholarly foundation for sustainable high-altitude resource management across the Himalayas.

b) **Multi-Level Determinants of Sustainable Harvesting and Conservation Perceptions:** A key outcome of the project was the analysis of data from 468 respondents across two municipalities, Thuli Bheri and Tripura Sundari, in Dolpa district. The analysis revealed that local people's

livelihood strategies and perceptions of biodiversity conservation are shaped by factors operating at multiple scales. At the individual and household levels, age, education, income diversity, and dependency on Cordyceps collection strongly influenced harvesting behaviour and conservation attitudes. At the village level, social norms, market access, and local governance structures affected participation in collective management. Most importantly, at the municipal level, the presence of local conservation policies, revenue-collection mechanisms, and enforcement capacity was the strongest predictor of sustainable harvesting practices and support for conservation. These findings demonstrate that effective Cordyceps management requires coordinated action not only among individual harvesters but also across municipalities and community institutions. The results provide a solid empirical foundation for designing multi-scale conservation and livelihood strategies, informing local policy discussions in Dolpa's municipal governments.

c) **Conservation attitudes are heterogeneous rather than uniform.** Results show that local people do not hold a single, unified view of biodiversity conservation. The survey results show that attitudes towards conservation are embedded in livelihood priorities, governance trust, and economic incentives. Through interviews and surveys, we also found that households highly dependent on Cordyceps income were more likely to prioritize short-term harvesting benefits, whereas households that depend on non-Cordyceps income showed comparatively stronger support for biodiversity conservation. The data also showed that socio-demographic variables influence local people's attitudes towards conservation. We found that higher levels of education were positively associated with supportive attitudes towards biodiversity conservation. Through interviews, we found that village-level norms and local governance arrangements affected willingness to participate in collective management and compliance with harvesting rules, suggesting that conservation attitudes are socially embedded rather than purely individual.

d) **Enhanced Awareness, Knowledge Dissemination, and Policy Dialogue at Local and Global Levels:** The project significantly advanced awareness, outreach, and policy dialogue on sustainable Cordyceps management. Through field visits, interactions with local politicians and conservation officials, radio programs, and newspaper features, the project directly reached hundreds of community members and local decision-makers across Dolpa. Awareness campaigns emphasized waste management, rotational harvesting, and the ecological consequences of overharvesting, fostering greater understanding of the relationship between environmental degradation and declining Cordyceps yield. As a result, local leaders initiated discussions on regulating grazing, implementing rotational harvesting practices, and enhancing waste management during the collection season. Through this discussion and awareness, we believe local leaders will initiate clearer municipal guidelines for rotational harvesting and grazing control. There has already been a conversation about improved coordination among local government and community user groups, as well as the introduction of practical waste management measures during the harvesting seasons. Over time, we believe these actions will reduce ecological degradation in high-altitude regions, improve compliance with harvesting rules, and contribute to more sustainable cordyceps yields while maintaining livelihood benefits.

The project team also presented key findings at major academic platforms, including the American Association of Geographers Annual Meeting 2025, the Himalayas Conference in Toronto, Canada, a symposium at the Agriculture and Forestry University in Nepal, a seminar at the University of Canberra, Australia, and multiple national and international symposia. We believe that presenting the findings to international and academic audiences strengthens conservation and local livelihoods by elevating Dolpa's socio-ecological challenges in global policy and research networks. As a result of this exposure, we are collaborating with a researcher from India to secure larger grants to conduct a comparative study across a broader landscape in the Himalayas. To bridge the realms of science, policy, and public communication, the team is preparing two articles to share internationally through The Conversation article, "The Fragile High-Altitude Ecosystem Faces Growing Threats: The Future of Cordyceps-Based Livelihoods at Risk," and locally through The Nepali Times feature, "The Human Cost of Nepal's Yarsa Gold Rush." These pieces aim to draw global attention to the socio-ecological challenges of harvesting Cordyceps. Collectively, these efforts have strengthened public understanding, scientific dialogue, and policy interest in balancing livelihoods and biodiversity conservation in high-altitude Himalayan ecosystems.

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

We have to go through several unforeseen challenges during the project. The first involved timing and political conditions in Nepal, as fieldwork coincided with the two national and local election periods, which limited travel, delayed administrative approvals, and disrupted coordination. The turnover of local leaders following the elections also required the team to re-establish communication and rebuild working relationships with newly elected officials in both municipalities.

In addition, the remote and mountainous terrain of Dolpa, combined with unpredictable weather, made travel and survey logistics challenging, leading to slower data collection than planned. Furthermore, a national update in financial regulations delayed the transfer of project funds from the central bank to the organizational account for several months, temporarily constraining field activities.

These challenges were addressed through flexible scheduling, increased reliance on local field assistants, and careful budget management, which helped sustain ongoing activities. The project team maintained close coordination with local authorities and eventually completed all fieldwork and deliverables successfully despite the delays. We sincerely thank the Rufford Foundation for granting an extension for final report submission, which allowed us to finalize all fieldwork and analyse data.

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

Local communities were actively involved throughout all stages of the project. Residents from two municipalities, Thuli Bheri and Tripura Sundari, participated in the household survey and interviews, contributing valuable insights on Cordyceps-based livelihoods and conservation practices. To ensure meaningful engagement, two local personnel were recruited and trained to

assist with data collection, translation, and community coordination. This provided capacity-building opportunities for young local researchers, improving their skills in survey administration, data handling, and environmental communication.

During the 2024 and 2025 Cordyceps harvesting seasons, the project team also organized on-site awareness programs in the high-altitude pasturelands, reaching approximately 150 locals. These sessions focused on the ecological impacts of overharvesting, waste management, and the importance of biodiversity conservation. Community members expressed appreciation for the practical guidance and shared environmental knowledge, which helped them understand how sustainable harvesting contributes to both ecosystem health and long-term livelihood security. As a result, several local groups initiated discussions on rotational harvesting and community-led waste management during future collection seasons.

5. Are there any plans to continue this work?

Yes. Building on the achievements of this project, we plan to continue and expand this work through a Completion Grant that bridges advanced research with practical implementation. The first booster successfully identified the social, economic, and institutional factors shaping livelihood decisions and conservation perceptions in Dolpa's Cordyceps-harvesting communities. With a rich dataset of 468 respondents, validated analytical methods, and strong partnerships with local municipalities, we are now well-positioned to translate these insights into evidence-based management and policy action.

The next phase will focus on applying the research findings to design and test community-driven solutions for sustainable Cordyceps management. This includes developing predictive structural equation models to identify the most influential drivers of sustainable harvesting, and piloting rotational harvesting systems and improved waste-management practices in partnership with local governments and community forest user groups. Follow-up surveys and participatory evaluations will be conducted to measure behavioural and attitudinal changes among harvesters after these interventions.

We also aim to strengthen the research-to-policy interface by collaborating with municipal authorities, the Himalayan Conservation and Research Institute, and provincial offices to integrate project outcomes into the Dolpa District Development Master Plan. Additionally, comparative studies will be conducted across other Cordyceps-harvesting districts to evaluate socio-ecological patterns and inform regional conservation policies.

Through this next phase, the project will evolve from diagnostic research to applied implementation, demonstrating how rigorous science can directly support local governance, conservation outcomes, and livelihood resilience in fragile Himalayan ecosystems.

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

The results of this project are being shared through multiple academic and public communication platforms to reach both scientific and community audiences. The first major publication, "Integrating Divergent Stakeholder Perspectives for Sustainable Management of High-Altitude

Ecosystems: Insights from Cordyceps Harvesting in the Himalayas," has already been published in Sustainability Science (2024). Building on this, we are currently preparing two additional manuscripts based on the multi-level analysis of the survey data, which we plan to submit to Global Environmental Change and Land Use Policy, both high-impact journals that focus on socio-ecological systems and policy-relevant research.

To ensure continued outreach beyond academia, we plan to write popular articles for The Nepali Times and The Conversation, highlighting key insights on Cordyceps harvesting, climate vulnerability, and community-based conservation. These platforms will help communicate the project's outcomes to national policymakers, journalists, and the broader public. At the local level, the findings will be shared through community workshops, municipal meetings in Dolpa to promote sustainable harvesting practices and strengthen policy dialogue. Presentations at national and international conferences, including the American Association of Geographers (AAG) Annual Meeting 2025, The Himalayas Conference, and symposia at the Agriculture and Forestry University, have already expanded the project's visibility and encouraged collaboration with other researchers. We are also planning to share the results (abstract accepted) at the NAPA 5th Biennial International Scientific Conference on May 26-28, 2026, where more than 250 Nepalese students, local practitioners, and researchers will attend. The Himalayan Conservation and Research Institute will also continue to disseminate findings through its website. Upon publication of the two planned outreach articles- "The Fragile High-Altitude Ecosystem Faces Growing Threats: The Future of Cordyceps-Based Livelihoods at Risk," and "The Human Cost of Nepal's Yarsa Gold Rush" as well as two peer-reviewed manuscripts, we will disseminate the summaries and results through the website and the social media channels to ensure open access and long-term engagement with diverse audiences.

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

The most important next step is to translate the research findings into practical, community-based management strategies that can be implemented and evaluated across Cordyceps-harvesting regions of the Himalayas. The first booster project successfully identified the multi-level social, economic, and governance factors influencing sustainable harvesting, but there remains a critical need to test, scale, and institutionalize these findings through applied interventions.

Future efforts will focus on developing evidence-based guidelines for sustainable Cordyceps management, including rotational harvesting systems, transparent tax and benefit-sharing mechanisms, and locally adapted awareness models. Working closely with municipal governments and community forest user groups, we aim to pilot and evaluate these management approaches under real-world conditions.

At the same time, expanding the research beyond Dolpa to include comparative analyses across other Himalayan districts will help identify context-specific and generalizable strategies for conservation-livelihood integration. Strengthening partnerships with Nepal's Ministry of Forests and Environment, local governments, and academic institutions will be crucial for integrating these practices into formal policy frameworks.

Ultimately, the next phase will focus on bridging research, policy, and implementation to create a replicable model for managing high-value natural resources that promotes both ecological resilience and economic well-being for mountain communities.

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?

Yes. The Rufford Foundation logo and acknowledgment were featured in all materials associated with the project. This included survey instruments, presentation slides, outreach posters, and awareness campaign materials distributed during field activities in Dolpa. The Rufford Foundation was also formally acknowledged in all academic publications, conference presentations, and media outputs derived from the project.

Specifically, the acknowledgment to the Rufford Small Grants (RSG) was featured in the peer-reviewed article published in Sustainability Science (Upadhaya et al., 2025) and in public communication pieces, including The Nepali Times and The Conversation. The Foundation's support was also highlighted during presentations at the American Association of Geographers (AAG) Annual Meeting 2025, The Himalayas Conference, and events at the Agriculture and Forestry University, Nepal.

Through these multiple dissemination channels, Rufford's contribution received significant national and international visibility, reinforcing its role in supporting community-based conservation and sustainable livelihood research in the Himalayan region.

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

- Suraj Upadhaya: Project coordination, reporting, data analysis
- Chantal Tumpach: Monitoring. evaluation
- Beeju Poudyal: Data management
- Suman Thapa: Local coordination, outreach/extension
- Devika Upadhaya: Survey collection
- Laxmi Prasad Devkota: Survey collection
- Laxmi Shahi: Survey, field work.

10. Any other comments?

ANNEX – Financial Report

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Figure 1: Interviewing local cordyceps harvesters in the field. Photo: Team Member

Figure 2: Interacting with local harvesters. Photo: Team Member

Figure 3: Local people harvesting cordyceps. Photo: Team member

Figure 4: Temporary village setup in harvesting area. Photo: Team member

Figure 5: Crowd heading towards harvesting pasture. Photo: Tek Shahi

Figure 6: Interaction and outreach program with local harvesters. Photo: Team Member

Figure 7: Team member conducting survey with local people. Photo: Team member