



**Community Based Human- Himalayan Brown Bear
Conflict Mitigation in Kargil District Ladakh
Final Report - 2025 - 2026**





1. Executive summary

The project “Community-Based Human–Himalayan Brown Bear Conflict Mitigation in Kargil District, Ladakh” was implemented by the Himalayan Brown Bear Trust (HBBT) with support from Eicher Group Foundation to reduce human-bear conflict in Drass and parts of Kargil through community-centric interventions, livelihood support and evidence-based mitigation measures. The project focused on four key activities:

- 10-day nature guide training programme for local youth;
- Installation of 100 solar-powered street lights in conflict-prone villages;
- Installation of 15 information boards;
- Piloting and installation of community bear-proof corrals;
- Conduct social surveys to understand and evaluate wildlife deterrents and conflict patterns in Drass and the Suru Valley.

Over the project period, HBBT successfully trained local youth as nature guides, installed and handed over solar lights to communities, designed and installed bear-proof corrals in select villages, and completed social surveys that generated actionable insights on deterrent effectiveness and community perceptions, thereby contributing to short-term conflict reduction and building a foundation for long-term coexistence strategies.



2. Background and rationale

Kargil district, particularly the Drass Valley and adjoining areas of Suru and Zaskar, has emerged as a hotspot of human–Himalayan brown bear conflict, with incidents ranging from livestock depredation to food stock raiding and property damage. The Himalayan brown bear population in western Ladakh is small and fragmented, with an estimated little over 200 individuals remaining in India, and around 50 bears using the Drass landscape; this makes every mortality and conflict-induced retaliation a serious conservation concern.

Previous interventions in the region, including fox lights, community awareness, camera trapping and limited livelihood initiatives, showed that short-term measures can reduce conflict but require scaling, diversification and integration with broader waste management and land-use planning to remain effective over time. The present project, therefore, seeks to operationalise a community-based model that simultaneously:

- Reduces immediate conflict risks around villages.
- Strengthens local stewardship and conservation constituencies.
- Builds alternative livelihood pathways linked to nature-based tourism.
- Generates empirical data to inform future policy and investments.

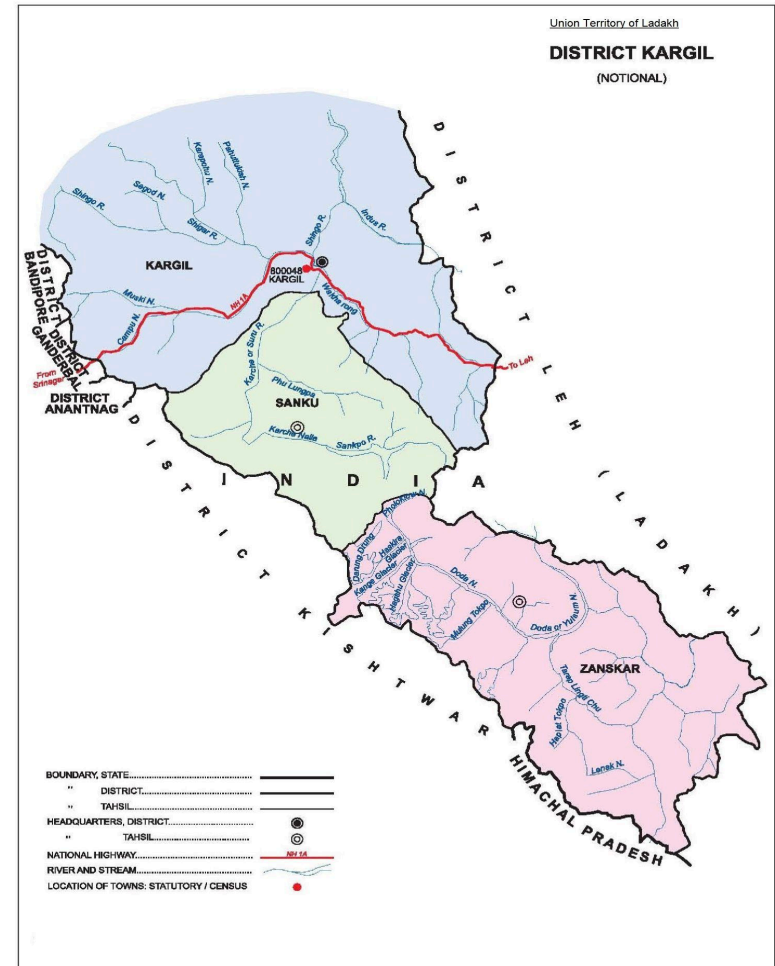


Image1: Kargil District Map (<https://kargil.nic.in/map-of-district/>)

3. Project objectives and scope



The project was guided by three main objectives as articulated in the original proposal:

1. To create short-term conflict mitigation measures in key conflict-prone sites in Drass.
2. To promote alternative sustainable livelihoods for local communities through nature-based skills and ecotourism opportunities.
3. To understand the effectiveness of different mitigation strategies and place-based deterrents through systematic social surveys.

Geographically, the work focused on selected villages in Drass (including Bhimbat, Masjid Gaoun, Gindiyal and Samart) and parts of Suru Valley where conflict reports have been increasing, building on HBBT's prior work in Holiyal, Bearas, Muradbagh and Mushkow. The timeframe covered one field season from May to December, with planning, implementation, monitoring and final reporting aligned to this schedule.

4. Activities implemented

4.1 Nature guide training programme

The project successfully conducted a 10-day nature guide training programme for 20 youth from the Kargil district, hosted in the Drass region, in line with the proposal design. A cohort of local participants (target: 20 youth) was selected through village-level consultations and outreach, ensuring representation from conflict-affected communities and inclusion of women where possible. As part of the programme design, local homestays in Mushkow village were engaged as the official boarding and lodging partners, which not only supported the logistical needs of the training but also served as a deliberate livelihood intervention for the community. This engagement provided homestay owners with income during the training period while simultaneously offering participants and homestay owners practical exposure to guest hosting, hospitality standards, and visitor interaction, thereby strengthening linkages between conservation, tourism, and local livelihoods.



The curriculum covered:

- Basics of Himalayan ecology and wildlife identification with emphasis on Himalayan brown bear ecology and behaviour.
- Principles of responsible and ethical nature guiding visitor management and safety.
- Interpretation skills, communication and story-building around local landscapes and culture.
- Field-based training in trail walks, use of basic equipment like binoculars, field guides, backpacks, jackets, caps and first aid.

Participants engaged in classroom sessions, field excursions and interactive discussions with trainers and local experts, culminating in a closing session with regional representatives and authorities, who acknowledged the role of trained youth as future conservation ambassadors in the region. At the end of the programme, participants received certificates and were linked with local tourism stakeholders and homestays for potential guiding opportunities during the tourist season.





Image 2, 3 & 4: Nature Guide Training Program

4.2 Installation of solar-powered street lights

As a core mitigation measure, 100 solar-powered street lights were procured and installed in four conflict-prone villages in Drass, selected through participatory site assessments and village meetings.

No	Village Name	Mohallah Name	No. of Solar Lights Installed
1	Smart	Smart	15
2	Bhimbat	Zargar Mohalla	12
3	Bhimbat	Ningoor Mohalla	10
4	Bhimbat	Sinyal	8
5	Bhimbat	Kashal	10
6	Bhimbat	Beetu	7
7	Bhimbat	Shikthang	9
8	Bhimbat	Jingyal	8
9	Gindiyal	Gindyal	6
10	Gindiyal	Nowpora	5
11	Masjid Gam	Masjid Gam	10
Total	4	11	100



Table1: Village Mohallah-wise Allocation of Solar-Powered Street Lights.

Measures to enhance night-time safety in villages complemented approaches to livestock enclosures and open corrals. Priority was given to paths frequently used at night, corrals, village peripheries, and areas along known bear movement routes near garbage points or agricultural fields. The installation process began with joint site mapping involving community representatives and youth volunteers with a GPS, followed by installation carried out by staff, with locals actively participating. The process was documented through photographs and simple installation records, ensuring transparency and accountability. Post-installation informal feedback from households and community-level discussions indicated improvements in night-time visibility and enhanced perceived safety.

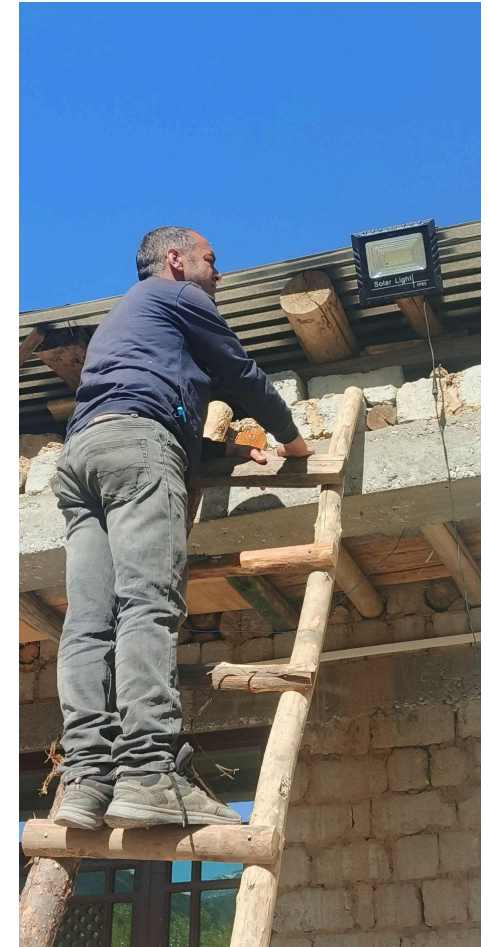




Image: 5 & 6 Solar Lights Installation

4.3 Design and installation of community bear-proof corrals

The project piloted the design and installation of behaviour based design of bear-proof corrals in selected villages in Drass to secure livestock at night and reduce losses from bear raids. Building on earlier experiences with fox lights and community watch groups, the corrals were planned as robust infrastructure where households could house their animals, thereby improving protection while keeping costs manageable.

Methods:

- Identification of suitable sites through village meetings, focusing on areas with recurrent livestock depredation.
- Development or adaptation of a corral design using durable materials, reinforced walls, secure doors and bear-resistant features, while keeping local construction practices and climatic conditions in mind.
- Engagement of local masons and labourers, combined with community voluntary labour, to build ownership.
- After installation, we will continue to monitor the corrals through camera traps and testimonials from livestock owners to ensure needed improvements to the design. Through an initial assessment, the livestock owners have highlighted reduced stress, fewer nights spent awake guarding animals, and an improved sense of security in the community.

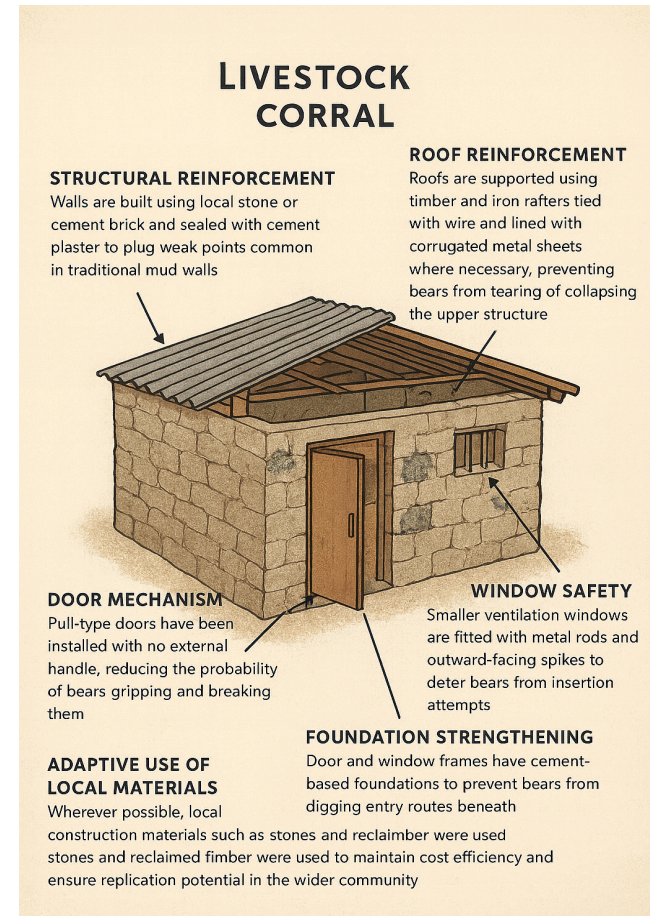


Image 7: Basics of Design Structure of Corral

S No	Mohalla	Village Name
1	Majapur	Goshan
2	Lamar	Goshan
3	Hatoo	Goshan
4	Hantos	Goshan
5	Mushkow	Mushkow
6	Goma Goshan	Goshan
7	Goshan	Goshan

Table 2: List of Beneficiaries



Image 8, 9, 10, 11, 12: Beneficiaries of Corrals



4.4 Social surveys on wildlife deterrents and conflict patterns

To meet the objective of understanding deterrent effectiveness, HBBT designed and executed social surveys in Drass and parts of Suru Valley, targeting households and key informants in known conflict-prone villages. The survey captured:

- Household characteristics, livestock holdings and dependence on agriculture.
- Incident histories of human–bear conflict, including livestock depredation, storage raids and property damage.
- Awareness, use and perceived effectiveness of deterrent measures such as fox lights, solar street lights, bear-proof corrals, traditional practices and guard dogs.
- Attitudes towards bears, tolerance thresholds, and views on compensation and support schemes

We studied the structural interventions, particularly livestock corrals, which demonstrated the highest effectiveness, with an average effectiveness score exceeding 4/5 and a success rate of approximately 80% in the simulated mitigation assessment. In context to the household conflict context, corrals most directly addressed the primary conflict outcome which is livestock loss, which affected the largest proportion of households described in our social surveys. In contrast, sensory deterrents such as foxlights, torches, tin-can noise devices, and dogs showed moderate to low effectiveness. While barbed wire performed moderately well ($\approx 75\%$ success), their effectiveness is also harmful to the bears and children in the neighborhood. Foxlights performed moderately well ($\approx 45\%$ success) but declined over time due to habituation, particularly in villages reporting frequent encounters across multiple seasons. Tin-can noise deterrents were consistently ineffective, with low success rates ($\approx 25\%$), mirroring the persistence of conflict in households relying on low-cost, single-method interventions. Cost–effectiveness ratio further reinforced these patterns. Higher-cost structural interventions (e.g., corrals) showed more consistent and durable outcomes, while low-cost measures exhibited high variability. Importantly, households reporting repeated losses despite deterrents often showed poor maintenance, improper placement, and lack of collective coverage as key reasons for failure. An important learning from the mitigation assessments is that, while sensory-based deterrents and secure corrals can reduce immediate risk and offer rapid, visible relief to affected households, bears may habituate to single-method interventions over time. Single-method, low-investment deterrents have the highest failure rates, reinforcing the limitations of ad-hoc measures. This highlights the need for an adaptive, multi-pronged strategy that combines complementary measures, specifically habitat and attractant management (including waste control), community awareness and behaviour change, and livelihood-support mechanisms that reduce household vulnerability and improve tolerance. Critically, mitigation must be place-based and grounded in



local socio-ecological context: interventions should be co-designed with communities, iteratively refined through monitoring, and aligned with local patterns of crop/livestock use, seasonal bear movement, and practical constraints on maintenance. Finally, the effectiveness of any strategy depends on cost-effectiveness, coordinated implementation across households, villages, and responsible agencies so that interventions operate as an integrated system rather than isolated actions, with awareness to the community, clear roles for ownership, upkeep, and rapid troubleshooting to sustain long-term functionality.

4.5 Installation of Information boards:

In parallel, a total of 15 information boards were installed across the same villages with the specific objective of raising awareness among both local residents and visitors regarding human - bear interactions and the broader principles of wildlife conservation.

These boards were carefully designed to provide clear and accessible guidance on multiple aspects of coexistence, including bear behavior, conflict mitigation strategies, identification of local fauna, responsible tourism practices, and important wildlife crossing cautions. By conveying these messages in a straightforward and engaging manner, the boards serve as a constant reminder of the importance of safe and responsible behavior in bear-inhabited areas.



Image 13: Installation of Information Board in Village

They were strategically positioned at key locations, including village entrances, prominent wildlife zones, and homestay hubs, to ensure maximum visibility and interaction with both villagers and tourists. Through their presence in these high-traffic and ecologically sensitive areas, the boards actively engage the community and visitors alike, helping to instill a shared sense of responsibility and commitment to protecting the region's fragile ecosystems, while simultaneously reinforcing the practical lessons of conflict mitigation and safe wildlife observation that are essential for fostering long-term coexistence.



5. Outputs and results

The project delivered the outputs committed in the proposal:

- **Nature guide training:** One 10-day training batch of local youth from Kargil was completed, with participants demonstrating improved knowledge of local biodiversity, guiding skills and conservation awareness; several trainees were linked to guiding opportunities or are now assisting in community-based tourism and awareness activities in their villages.
- **Solar street lights:** 100 solar-powered street lights were installed and made operational in four villages in Drass, leading to improved night-time visibility, a reduction in surprise encounters around houses and livestock sheds.
- **Information boards:** 15 Information boards were installed in 4 villages of Drass to promote knowledge and access to the right information about the bears and ways to live alongside the bears.
- **Bear-proof corrals:** Community corrals were designed and installed at pilot sites, protecting livestock from nighttime bear raids; initial monitoring and community feedback suggest a reduction in losses for households using the corrals and greater confidence in adopting non-lethal mitigation measures.
- **Social survey and evidence base:** The survey generated a structured dataset and field-based insights on deterrent use and community attitudes.

Collectively, these outputs contributed to short-term conflict mitigation, strengthened community participation in conservation, and laid a foundation for longer-term landscape-level planning for Himalayan brown bear conservation in Kargil district.



7. Challenges and mitigation

Implementation in a high-altitude, remote and climatically harsh region like Drass inevitably faced some challenges. Unseasonal road closures, unpredictable weather and short working windows constrained scheduling of installations and field travel, requiring flexible planning and close coordination with local partners.

Additional challenges included:

- Ensuring consistent community participation across all phases, especially during peak agricultural periods when households are busy in fields.
- Vandalism was another big issue we faced especially with the information boards. The boards are pelted and
- Managing expectations regarding the immediate reduction of conflict incidents, given that some drivers of conflict (e.g., landscape-scale habitat changes, border fencing, waste dumps) lie beyond the control of communities and a single project.

These challenges were mitigated through:

- Prioritising intensive work in a smaller set of villages rather than thinly spreading resources.
- Building a cadre of local youth able to undertake basic troubleshooting.
- Continuous communication with communities to clarify project scope, share monitoring findings, and jointly discuss realistic next steps and complementary measures with government departments.



8. Sustainability and next steps

The project was explicitly designed to create interventions that can be owned and managed by local communities beyond the project period. Solar street lights were formally handed over to villages with basic guidance on care, and the involvement of local youth in installation and monitoring has increased local technical familiarity and accountability.

The nature guide training invested in human capital that will continue to support conservation and ecotourism in Kargil district; some trainees have already begun engaging with visitors, assisting in awareness events, or supporting HBBT during field activities, thus reinforcing a pathway for sustained livelihoods linked to conservation. Bear-proof corrals, once established, represent durable infrastructure that can be expanded or replicated in other villages, potentially with support from government schemes or CSR partners; the social survey findings and project experience provide a strong evidence base to advocate for such scaling. For the next phase, priority areas include:

- Scaling up bear-proof corrals and integrated deterrent packages (lights, structural measures, waste management) to additional high-conflict villages.
- Deepening collaboration with district authorities on compensation, insurance, and improved husbandry practices, drawing on survey recommendations.
- Continuing and possibly institutionalising nature guide and community stewardship programmes to anchor conservation leadership within the landscape.
- Overall, the project has met its stated objectives, delivered its key outputs, and demonstrated that community-based, non-destructive conflict mitigation linked with livelihood support is both feasible and impactful in the Drass and Kargil landscape, while also identifying clear pathways for consolidation and scale.