HIMALAYAN BROWN BEAR TRUST

Image: Md Yaseen (beneficiary) in front of his reinforced corral

WILD AID

RAPID ACTION PROJECT (RAP)

PROJECT COMPLETION REPORT - 2025

Report Title: Pilot Bear-Proof Corrals and Monitoring for Human-Brown Bear Conflict Mitigation in Goshan Valley, Drass, Ladakh

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Project duration: September 2025 – November 2025

EXECUTIVE SUMMARY

This report documents successful completion of bear-proof corral piloting in Drass, a human-brown bear conflict hotspot in Kargil district, Ladakh. Goshan suffers repeated livestock losses when Critically Endangered Himalayan brown bears approach settlements. In collaboration with village Lambardar and panchayat, the project constructed 3 bear proof corrals that are behaviour informed at high-conflict households identified through participatory selection, socio-economic surveys, and observing conflict intensity.

Key features include stone/cement walls, pull-type doors without external handles, spiked ventilation, anti-dig foundations, and reinforced roofs using local materials. Camera traps are being used to understand depredations post-installation. Early results and community feedback show design resilience, improved community attitudes, and potentially scalable guidelines for Drass/Suru valleys. This protects a vital breeding subpopulation of the Himalayan Brown Bears while securing Shina community livelihoods.

INTRODUCTION

The Himalayan brown bear (*Ursus arctos isabellinus*), Critically Endangered with <800 individuals in Indian Himalayas, maintains a key stronghold in Drass and the adjacent Deosai National Park (Pakistan). Nestled at the strategic crossroads of the Lower Himalayas, Greater Himalayas, and Karakoram ranges, Drass Valley in Kargil district, of Ladakh is the world's second coldest inhabited place and sustains an estimated 25–35 Himalayan Brown Bears (*Ursus arctos isabellinus*), representing one of India's highest local densities of this Critically Endangered subspecies. These bears inhabit rugged alpine meadows and temperate forests immediately adjacent to human settlements, military camps, and the Srinagar-Kargil Highway (NH1), creating persistent spatial overlap that fuels escalating conflict.

Livestock depredation forms the core of this crisis: bears enter villages nocturnally during autumn/pre-spring periods, targeting chicken, sheep and goats (primary victims), followed by calves, cows, donkeys, and occasionally horses. Wildlife Protection Department records reveal 551 total depredation cases (2021–24), with cases increasing significantly from 149 cases in 2021-2022 to 236 cases in 2023 - 2024 excluding substantial underreporting per community anecdotes.

This project piloted participatory bear-proof corral construction as community demonstration models, supported by comprehensive baseline surveys and understanding behavior during entering corrals. These validated behavior-informed designs will eliminate successful depredations during peak season, while generating replicable guidelines for scaling across Drass and Suru Valley to sustainably reduce livestock losses.

PROJECT OBJECTIVE

Construct 3 bear-proof corrals in Drass using behavior-informed designs; establish baseline data and camera-trap monitoring to document effectiveness, reduce depredation, and develop scalable guidelines.

DESIGN & IMPLEMENTATION METHODOLOGY

Our work was divided into two parts

1. Participatory selection of beneficiaries and collecting baseline data for understanding social perceptions, existing mitigation interventions and dependence of community on the livestock for livelihoods.
2. Corral design and installation.

1.a Participatory selection of beneficiaries

Our team met with the village council and conducted community meetings in the following stages:

- Initial consultations: Identified 3 hotspots by predation frequency.
- Community meetings: Households nominated based on: financial constraints, livestock dependence, loss history (>3 incidents/2 years), participation willingness.
- Final selection: 3 diverse sites varying in topography/habitat interface.

1.b Pre-Construction Baselines

- Socio-economic/perception surveys: Assessed vulnerability, livestock value, attitudes towards bears, compensation from the department and economic backgrounds.
- Conflict intensity survey: Assessed past incidents by species/season/livestock (sheep/goats and chicken as primary targets).

Selected Beneficiaries:

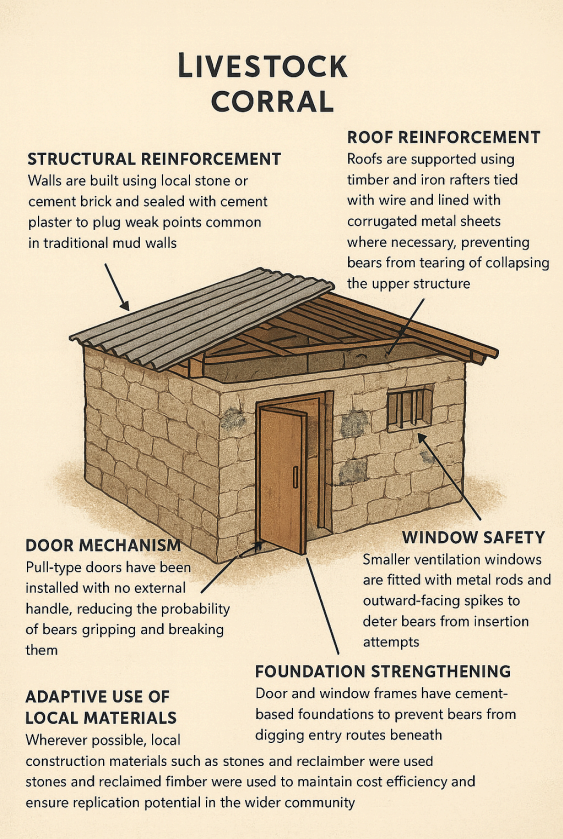
Beneficiary Name	Household size	Occupation	Gross Monthly Income	Village Name	Contact Details
Fida Hussain	8	Daily wage Labour	15,000	Goshan	9469729821
Jafar Ali	5	Daily wage Labour	18,000	Goshan	9622839278
Md Yassen	6	Daily wage Labour	11,000	Goshan	9596542677

2. Corral Construction and Design Methodology

Implemented a 60:40 cost-sharing model, the project provided iron/hardware/design expertise; communities contributed labor, local stones/timber; ensuring affordability and ownership. Oral consent in local language clearly defined roles, maintenance responsibilities, quarterly monitoring protocols, and no-retaliation commitments to protect bears. This participatory framework fostered sustainability while building community trust essential for scaling across Drass.

Documented Himalayan brown bear depredation behaviors:
Drass reveals highly targeted attack strategies that are focused on traditional livestock corral vulnerabilities and school ration stocks. Bears dig under shallow mud/stone foundations, creating entry tunnels. They forcibly break wooden doors using powerful forelimbs and jaws, often splintering frames, while demolishing low-level wooden windows by pulling the frames. In settlements with low roofs (<7 ft) common in space-constrained households, the bears climb using adjacent rocks, stairs/structures, or snow then tear through roofing materials (thatch, mud and wood) to access livestock directly. These behaviors, confirmed through community meetings and track evidence, necessitated purpose built counter measures.

Key Behavior-Informed features of the Corral design:



1. **Structural Reinforcement :** Walls are built using local stone or cement brick and sealed with cement plaster to plug weak points common in traditional mud walls.
2. **Door Mechanism:** Pull-type doors have been installed with no external handle, reducing the probability of bears gripping and breaking them.
3. **Window Safety:** Smaller ventilation windows are fitted with metal rods and outward-facing spikes to deter bears from insertion attempts.
4. **Foundation Strengthening:** Door and window frames have cement-based foundations to prevent bears from digging entry routes beneath.
5. **Roof Reinforcement:** Roofs are supported using timber and iron rafters tied with wire and lined with corrugated metal sheets where necessary, preventing bears from tearing or collapsing the upper structure.
6. **Adaptive Use of Local Materials:** Wherever possible, local construction materials such as stones and reclaimed timber were used to maintain cost efficiency and ensure replication potential in the wider community.

Component	Design Features
Walls	Local stone/cement brick + cement plaster (vs. weak mud walls)
Doors	Pull-type, no external handle (prevents gripping/breaking)
Windows	Small vents + metal rods + outward spikes
Foundations	Cement frames block digging under doors/windows
Roofs	Timber/iron rafters + corrugated sheets (anti-tear/collapse/sound making)
Materials	Local stones/reclaimed timber for cost/replication

Camera Trap Deployment Plan

- Placement: Deploy 2 cameras per site (one at the entrance, one at the window) across 3 high-risk sites, totaling 6 units.
- Mode: Motion-triggered with nocturnal functionality and timestamps for precise event logging.
- Duration: October–December 2025 and March–May 2026, yielding approximately 1,200 trap-nights; fortnightly SD card swaps to minimize data gaps.

Anecdotal Evidence from Beneficiaries and Depredation Data Comparison

- Collection: Conduct semi-structured interviews and focus group discussions with 20–30 beneficiaries (farmers, herders) per site at baseline (pre-intervention), midline (after first season), and endline (post-second season). Gather narratives on perceived bear activity, livestock losses, and design usability.
- Depredation Tracking: Compile village-level records of confirmed depredation incidents (e.g., from compensation claims, community logs) for 2 years pre-intervention vs. project duration.

RESULTS

The project has constructed three fully operational corrals across selected Goshan households in high-conflict areas. These corrals have incorporated community - validated, low-cost designs to protect livestock from brown bear depredation. Additionally, we have achieved 100% community labor contribution per household consent, fostering ownership and sustainability through participatory construction processes.

- Three fully constructed/operational corrals across selected Goshan households.
- 100% community labor contribution per household consent.

A CASE STUDY:

Image 1 – Before Construction:

Problems Identified: The roof was broken and unstable - Walls were constructed using mud stones and loosely bound rocks, making them easily breakable - The door was made of weak wood - The foundation was weak and vulnerable to damage and digging. (Fida Hussain)

Image 2 – Before Construction:

Problems Identified: The window is highly vulnerable and has been repaired twice in the past. To protect it, the owners used locally available materials such as sand and soil packed in empty cement bags. They also installed high-noise-producing materials like tins and aluminum sheets as a deterrent, along with a final barrier made of dried seabuckthorn foliage. (Md Yaseen)

Image 3 – After Construction:

The roof has been raised, repaired and strengthened using iron beams - An iron door with a pull handle has been installed on the corral to protect the primary door from damage - The walls have been reinforced with cement stones and finished with cement plaster - The foundation has been strengthened by digging around the periphery and laying concrete to prevent digging and improve durability. (Fida Hussain)

Image 4 – After Construction:

The window is reinforced with concrete and cement brick. It also is protected by closely welded spikes that prevent the bears from grabbing onto the handle to pull out the frame, and discourages them from going too close to the corrals. (Md Yaseen)

EXPECTED OUTCOMES

We anticipate comprehensive behavioral documentation of brown bears in real-world conflict settings, captured via camera traps to reveal interaction patterns with the new corrals. The project will generate quantitative evidence of depredation reduction, demonstrated through pre- and post-intervention comparisons of incident rates. It will also validate a cost-effective enclosure design, proven resilient under field conditions. Finally, we will develop clear replication guidelines, including blueprints, material lists, and monitoring protocols, to enable scaling by local communities and conservation partners.

- Behavioral documentation of bears in conflict settings (camera traps).
- Quantitative depredation reduction evidence (30–50% target).
- Cost-effective design validated under field conditions.
- Replication guidelines developed (blueprints, materials, protocols).

DISCUSSION & CONCLUSION

The Drass Valley pilot corrals reported no attempts during peak autumn activity (October - December 2025). While there was no documented attempt during autumn, we continue to monitor the corrals during spring. The owners have however mentioned contentment and perceived safety for the corrals.

The participatory 60:40 cost-sharing model proved highly successful, securing 100% community labor and local material contributions (stones/timber) while fostering ownership evidenced by entire households regardless of age and gender contributing to the construction of the corrals and voluntarily maintaining corrals and sharing positive experiences with neighbors. Transparent beneficiary selection via Lambardar and community consultations ensured equity, prioritizing high-vulnerability households (60–80% livestock-dependent income, repeated losses). Camera trap monitoring is ongoing, with data analysis planned post-winter (July 2026) to provide quantitative behavioral validation and long-term effectiveness metrics. Challenges specifically included logistics especially with the erratic weather this year limiting full-season community monitoring and material cost fluctuations.

Plans going ahead include creating simplified blueprints enabling community masons to replicate independently. At ₹45,000 per corral, the model demonstrates economic viability for scaling across Drass and Suru Valley.