a) Title of the project, year of the grant, your name, affiliated organisations

"Healing the herds" An exploration to document the ethnoveterinary practices of the Palsi shepherds in the Western Himalayas", 2022, Amish Dua, Masters Student, IISER Mohali India

b) Contacts made (people & organisations) that were helpful,

Shepherd of Himalayas is an independent organisation aimed at working for the welfare of shepherd communities in the Indian Western Himalayas and has played a crucial role in providing contacts and hence the project's success. **Mahesh Ghate**, founder of the Shepherd of Himalayas organisation, played an essential role.

Centre for Pastoralism also an organisation working for the welfare of the shepherd communities all over India also provided support in terms of funding for projects on livestock health and understanding the use of modern medicine.

Uttarakhand Forest Department also was an important contact made during the project along with IFS Officer **Inder Singh Negi** division wise meetings were organised to understand the problems of shepherds in the area. Which helped gain contacts of more number of shepherds in the area.

Mukesh Singh Bisht and **Pradeep Singh Bisht** were the two key shepherd contacts that acted as field assistants for the project and also helped in connecting me with all the shepherds in the area

Geographic and place names of research locations

Our study focused on 11 villages surrounding the Rudranath alpine meadow, which is situated within the Kedarnath Wildlife Sanctuary (KWLS) at coordinates 30.519°N, 79.32°E and an elevation ranging from 3,200m to 3,600m above sea level. The surveyed villages include Siroli, Mandal, Gwar, Sagar, Gangol Gaon, Kujaon, Kana Khandra, Kimana, Jakhola, Kalgoth, and Dumak. Over a four-month period, we conducted interviews with 66 shepherds.

Description of vegetation and terrain

The Kedarnath Wildlife Sanctuary (KWLS) stands as a testament to the rich biodiversity of the region, shaped by its unique climate, geology, and varied topography. The sanctuary's diverse vegetation encompasses a range of 19 broad categories. Renowned for its medicinal flora, KWLS is a refuge for endangered plant species such as Acer caesium, Nardostachys jatamansi, Picrorhiza kurroa (Kutki), Podophyllum hexandrum (Bankakri), Saussorea obvallata (Bhrama Kamal), and A. heterophyllum (Atis).

The sanctuary's terrain varies from temperate zones to higher alpine regions. Dominant trees like Oak, Fir, Alder, and Rhododendron form the dense canopy, while the understory is lush with bamboo thickets. As one ascends, the hilly landscape, characterised by its gentle slopes, gives way to alpine scrubs and expansive meadows. Specifically, the area boasts two predominant forest types: sub-alpine scattered trees and scrub (found between 2800 m–3400 m a.s.l.) and alpine meadows interspersed with rocky outcrops (elevated > 3400 m a.s.l.). Weather conditions in KWLS can be extreme, marked by biting cold in winter months (November to March) and prolonged monsoon showers from July to September.

Where the collections are / will be deposited,

Due to the restrictions set by the Uttarakhand Forest Department, we could not secure permission to collect physical plant specimens. Instead, the Divisional Officer of the Kedarnath Forest Department recommended digital documentation. As a result, all our collections are digital. I plan to share these photographs on various international databases and platforms that cater to plant enthusiasts and researchers. Notably, the India Biodiversity Portal is a prime platform to upload my collection.

Broader impacts/significance of research

The research uncovers the deep-rooted ethnoveterinary wisdom of shepherds in the Kedarnath Wildlife Sanctuary, emphasising their reliance on Aconitum spp. (jhadwa) and Cedrus deodara (Devdar) to manage livestock ailments. These findings not only validate indigenous knowledge but also highlight potential broader applications in sustainable livestock healthcare. By shedding light on these traditionally employed remedies, the study holds promise for integrating these practices into modern veterinary care, potentially benefiting pastoral communities beyond the sanctuary and reinforcing the importance of preserving such ecological and cultural knowledge.

The findings of this study also illuminate the intricate dynamics between age, education, wealth, village and ethnoveterinary knowledge, revealing potential vulnerabilities in ethnoveterinary practices. The observed decrease in traditional knowledge among the younger generation and wealthier communities underscores an emerging trend towards modern healthcare methods at the expense of indigenous wisdom. This research's significance lies in its emphasis on the cultural and practical value of traditional ethnoveterinary practices, which are proven, sustainable, and tailored to the specific needs and constraints of local communities. As modernisation continues, there's a real risk of losing these invaluable practices, which could have broader applications in sustainable and cost-effective veterinary care globally.

One or two photos

Preparation of an Ethnoveterinary medicine used to treat respiratory infections in livestock in a remote village called Dumak

"Chvatlu" or Rhamnus virgatus bark used for eye infection