

Trade, harvest and sustainability of Caterpillar Fungus in the Nanda Devi Biosphere Reserve, India

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Fig. 1. Caterpillar fungus in natural habitat



Fig. 2. Structure of caterpillar fungus (*Ophiocordyceps sinensis*)



Fig. 3. Harvesters' camps in alpine pasture during harvesting season



Fig. 4. Harvesters taking drinking water from a polluted river channel



Fig. 5. Outreach programme among stakeholders

Caterpillar Fungus (*Ophiocordyceps sinensis*) - An Introduction

- ☞ A flagship species forming parasitic complex of entomophagous fungi and caterpillar.
- ☞ Endemic to the Himalaya and Tibetan Plateau.
- ☞ Called Caterpillar Fungus (*Ophiocordyceps sinensis*) in common usage. Local names include Yarsa Guenbub (Bhutan), Kira Jari (India), Yarsagumba (Nepal), Yartsa Gunbu (Tibet) etc.
- ☞ Widely traded as an aphrodisiac and a powerful tonic, popularly known as 'Himalayan Viagra'.
- ☞ Very expensive natural resources, at par with gold, the price was USD 140,000/Kg in 2012 (Shrestha and Bawa, 2013).
- ☞ Provides livelihood opportunities for millions of people who live in remote areas of the Himalaya.

Study Area

The Nanda Devi Biosphere Reserve is located in Garhwal and Kumaon regions of Uttarakhand in the Western Himalaya, situated between 79.200000 to 80.316667 E longitude and 30.083333 to 31.033333 N latitude (Fig. 6). The Nanda Devi region was declared as a biosphere reserve in 1988 under the Man and Biosphere (MAB) Programme of UNESCO, and subsequently in 1992, the reserve got the recognition as a World Heritage Site.

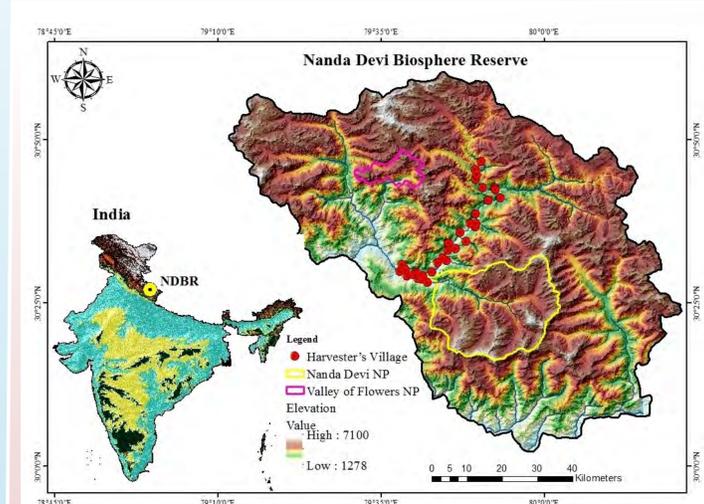


Fig. 6. Location of the Nanda Devi Biosphere Reserve

Materials and Methods

Primary data were collected through questionnaire survey, structured and open ended interviews, Participatory Rural Appraisal (PRA) and Rapid Rural Appraisal (RRA) methods. Overall, 312 households (~10 per cent of total households) were randomly sampled through interviews. Qualitative information was collected through key informant interviews, focus group discussions, informal communications, and personal field observations. During field surveys, the aim was to interview a cross-section of the community that reflected age, gender, types of employment or livelihood and participation in traditional activities.

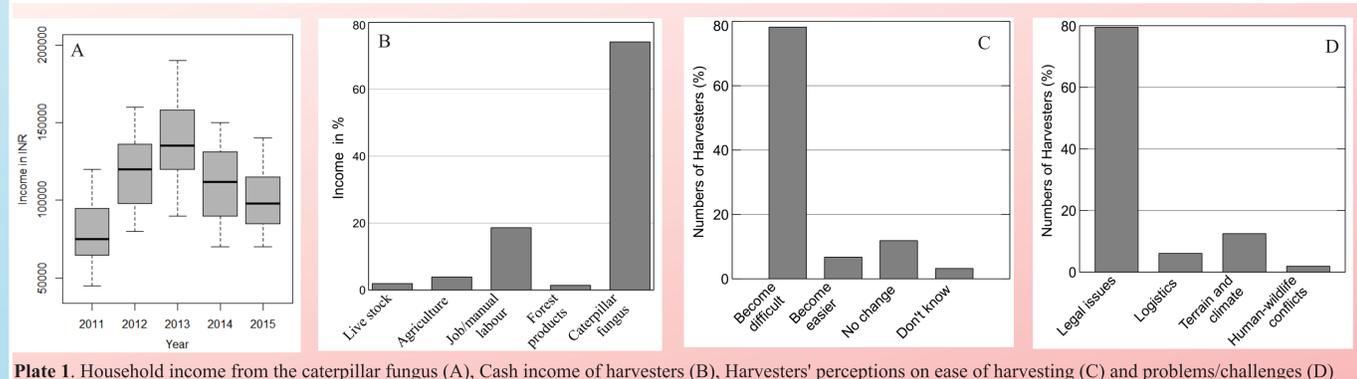


Plate 1. Household income from the caterpillar fungus (A), Cash income of harvesters (B), Harvesters' perceptions on ease of harvesting (C) and problems/challenges (D)

Challenges

- ☞ The lure of easy money has resulted into unsustainable harvesting of the species as well as rampant habitat pollution and destruction.
- ☞ The growing dependency of the local community of this remarkable gold rush has promoted social dispute.
- ☞ Due to legal issues, harvesting and trade of caterpillar fungus are marred with risks.
- ☞ The harvesters and traders get into conflicts among themselves due to breaching of trust regarding payment of money.
- ☞ Unsustainable and rampant harvesting of the species is causing its local extinction as well as destruction of eco-sensitive habitats which support many threatened flora and fauna including the enigmatic snow leopard.

Rationale of the Study

- ☞ To highlight ecological threats in the alpine meadows for protecting enigmatic fauna & flora including the snow leopard.
- ☞ To bring in light the need for protection of natural monuments, e.g., the Nanda Devi peak, Valley of Flowers, Dronagiri mountain etc.
- ☞ To protect alpine meadows which are prone to climate change.
- ☞ To protect local forest rights and advocate livelihood means.
- ☞ Explore alternative livelihood options to minimize pressure on the natural resources, especially those on the alpine meadows.
- ☞ To recommend a holistic policy for management of the caterpillar fungus not only from the conservation perspective but also for the economic well-being of the indigenous communities.



Fig. 9. Project team with school children during outreach programme

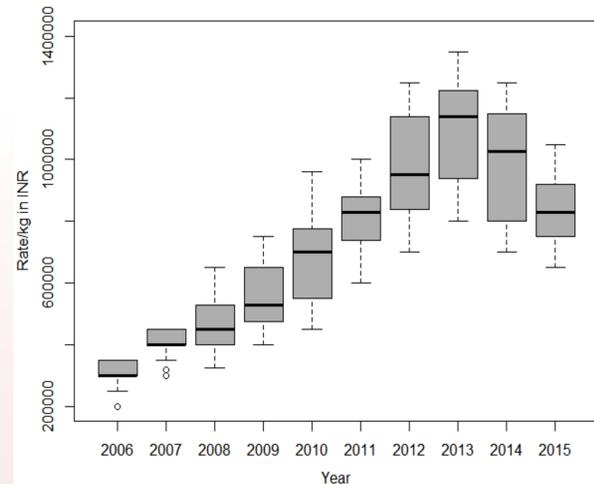


Fig. 7. Trends of selling price of caterpillar fungus by the local harvesters

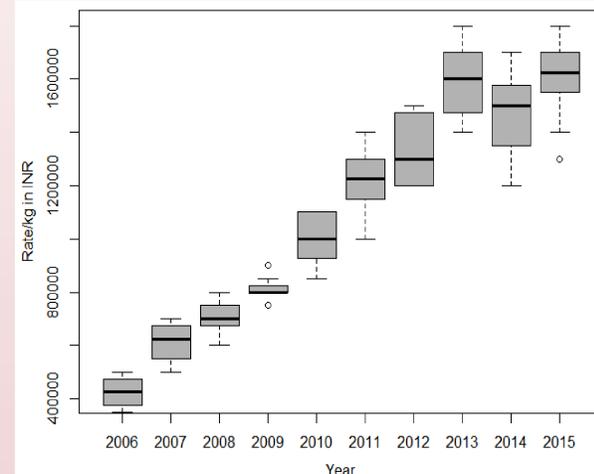


Fig. 8. Trends of selling price of caterpillar fungus by the local traders