



Wildlife trapping technology of Arunachal Pradesh

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Abstract

Hunting and trapping of wild animals was banned by India's Wildlife Protection Act of 1972. While the state terms it an illegal activity, various social science scholars believe it is a source of livelihood for people living in mountainous terrains. They argue that wild animal trapping is a part of people's livelihood and is linked to the socio-cultural lifeworld of Indigenous people. At the same time, the debate revolves around sustainability; specific knowledge about wild animals and their landscape required for trapping and other subsistence activities is often sidelined. Therefore, this project aims to document the people's knowledge of wildlife trapping in Arunachal Pradesh. It intends to identify the different techniques used by the Idu Mishmi to trap wild animals and document the technical know-how involved in each technique. Eleven trapping techniques, including fishing methods, were documented, of which four are explained in detail: the preparation, materials used, seasons of their usage, and the animals targeted. The people of Arunachal Pradesh depend on their traditional knowledge of the landscape, forest, and animals, which are crucial for farming, hunting, and trapping practices.

Keywords Traditional trapping techniques · Wildlife · Idu Mishmi · Arunachal Pradesh

1 Aim and the introduction

Wild animals have been pursued, captured, or hunted since immemorial as they are significant sources of subsistence, commercial, and food security. Nevertheless, hunting and trapping practices are embedded in multidisciplinary contexts of ecology, as well as socio-political and cultural aspects (Aiyadurai et al., 2010; Dutta & Lahiri, 2022). While the dominant narrative among ecologists considers hunting as one of the major threats to biological diversity with its direct or indirect impacts on ecosystems, it is just one of the aspects of the practice (Aiyadurai 2011). From a socio-political-economic perspective, the hunted animals provide food security and become the source of medicine, trade, and adornment (Pachau & Schendel, 2021). Hunting wild animals remains a prominent source of livelihood for many forest-dependent peoples, with the need for

economic alternatives. Moreover, it is integrally related to agriculture, especially in hilly terrains. While hunting with the use of guns is time-consuming, trapping is usually a low-cost method of capturing species and is prepared with locally available materials like bamboo, and these are set up in a wide range of areas, from farmlands, riverbeds, and kitchen gardens to forests and mountaintops (Aiyadurai, 2012). What significantly guides the very conduct of capturing, trapping, or killing wild animals has linkages with the cultural taboos attached to the act of hunting (Nijhawan & Mihi, 2020; Sharma & Lal, 2024). This defines the prominence of trapping and hunting among Indigenous communities beyond the mere functionality of the trapping activity by reflecting on communities' worldviews embedded in the people-plant-animal relationality. In this context, the project aims to understand the technology of trapping in Dibang Valley, Arunachal Pradesh. It attempts to document the different techniques of trapping—the setting up process, materials used, seasons in which they are used, and animals targeted—that the Idu Mishmi people have traditionally used for capturing wild species.

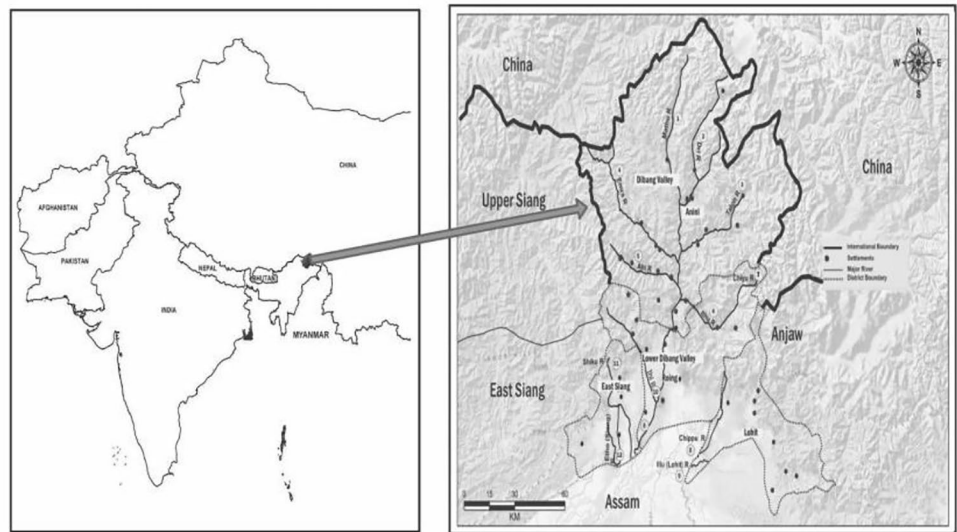
Arunachal Pradesh is a state in India's northeast bordered by Bhutan to the west, the Tibet Autonomous Region of China to the north, Myanmar (Burma), and Assam to the south and southwest. As a part of the Himalayas, one of the Biodiversity Hotspots in India and one

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Fig. 1 Map of Arunachal Pradesh



among the 200 ecoregions identified by the World Wide Fund for Nature (Myers et al., 2000; Olson & Dinerstein, 1998), it is home to over 5000 varieties of flowering plants, 650 bird species and more than 500 types of fauna. Besides, Arunachal Pradesh has the lowest population density in India, with only 17 persons/sq. km. The study was conducted in the Dibang Valley district in the northeastern part of the state (Fig. 1), having the lowest population density (one person/sq. km). According to Census 2011, the district has a population of about 8000 people, and they belong to the Idu Mishmi community, one of the four sub-groups of the Mishmi tribe. For those who live in remote parts of the district, trapping has been an important source of livelihood for ages and continues to be so to a certain extent.

The study is primarily based on field research conducted between January and April 2022 with the help of Eha Tacho, a resident of Dibang Valley and a post-graduate student of Rajiv Gandhi University, Arunachal Pradesh. Choosing a team member from the local community helped in ensuring people's cooperation and support. Field data were collected using a datasheet, semi-structured interviews, observation, and digital documentation (photography and videography). The datasheet included variables like the name of the trap, frequency of usage, species targeted, location of the traps, and so on. The project report consists of the following chapters: (i) Introduction, (ii) methodology, (iii) study area, (iv) traps and their mechanism, materials used, (v) assembling and setting up, (vi) mammals of Dibang Valley: eco-cultural aspects, (vi) concluding remarks, Appendix: List of mammals and traps.

2 Detailed discussion of the work

The Idu Mishmi of Arunachal Pradesh, mostly those residing in remote villages, engage in the trapping of wild animals for various purposes, such as to supplement their nutrition, crop protection, or medicinal resources. They use different trapping methods depending upon the behaviour of the animal targeted. Some are set up on the trees, while others may be set on the ground. The traps typically use locally available materials like bamboo, wood, ropes, stones, and metals. Trappers rely on their traditional knowledge about the animals, including their preferred fruits and habitats, to strategically set up the traps.

2.1 *Deprah* (stone-trap)

It is a stone-based trap mainly used for rodents and small birds. A 5–6 inch diameter stone weighing about 5–10 kg is positioned at a 45-degree angle with respect to the ground using bamboo sticks. A few grains or fruits are placed below the stone to attract animals. Thus, when the animal tries to eat grains/fruits, the planted mechanism will make the stone fall on the animal, which eventually injures or kills the animal. Generally, these traps are frequently set up on farms or in kitchen gardens. The ground base is cleared of grasses and leaves to set up the trap. Bamboo is then cut into sticks of different dimensions, one of which is used for supporting stone, one for treading, and one for balancing the stone and the sticks (Fig. 2). The treading stick is then covered with the rest of the bamboo sticks, which will serve as a platform for the animal to step on. Note that there is no permanent joint in the combination. Once the animal steps onto the platform, the stone will fall upon it.





Fig. 2 *Deprah* (stone trap)



Fig. 4 *Buhu drah* (pit-trap)

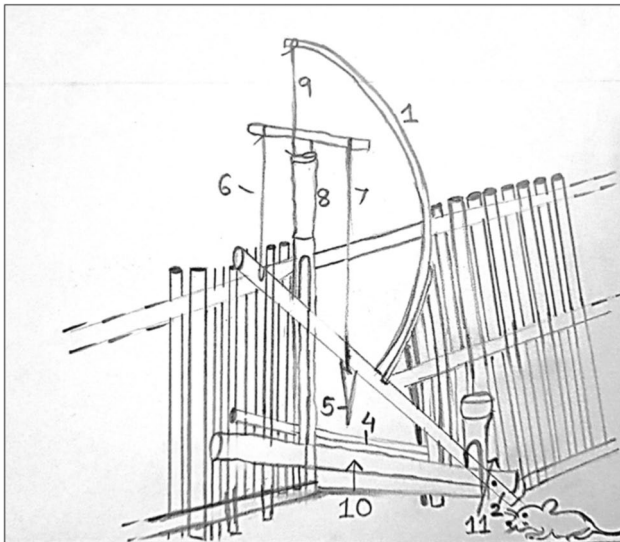


Fig. 3 *Adrapoh drah* (snap-trap) (Illustration reproduced from Tayanin & Lindell (2012))

2.2 *Adrapoh drah* (snap-trap)

It is mainly used for trapping mice, squirrels, snakes, and birds. It can be used on the ground as well as on trees. The materials used are bamboo sticks, and the triggering mechanism requires a string. Three bamboo sticks (4, 10, 11, as shown in Fig. 3) are joined at the common centre 2. Out of which, the lower one (10) will act when the animal

steps on it, and the upper one (11) will act as a trap. Animals will be trapped between lower and upper sticks. Stick 5 is placed between stick 4 and stick 11. It acts as a trigger mechanism stick. Stick 5 is attached to balancing stick 3 by string 7. The balancing stick 3 is attached to the upper bamboo stick 11 by string 6 and string 7. The upper stick 11 is also attached to the flexible bamboo stick 1, which provides an elastic force for the mechanism. Stick 1 is attached to the bamboo stick 8 by string 9. When the animals enter and touch the middle bamboo stick 4, it gets lower by the weight of the animals, which will free the movement of the triggering stick 5, as stick 5 is attached by upper stick 11 and stick 4. Initially, the elastic force by stick 1 and the tension force by string 6 were equal and opposite, which was holding the upper stick 11. As stick 5 gets free; it will release the tension in string 7. In the starting, two tension forces were acting on the balancing stick 3, but now, only one force is acting on string 6. Thus, there will be no tension force in string 6, as it was an equal and opposite reaction of the tension force in string 7. When the tension in string 7 becomes zero, the tension in string 6 also becomes zero. Force by string 6 stops the upper stick 11 earlier, but as tension in string 6 becomes zero, only elastic force by stick 1 will act; thus, the upper bamboo stick will move downwards quickly and trap the animal.

Generally, it is placed next to burrows of rodents so that when they come out of the burrow, they get captured. For birds, the entire trap is hung to the tree at a certain height, and for the squirrel, it is placed mostly on the branches of



Fig. 5 *Sikhembra drah*

trees. To attract the animals, a bunch of fruits, berries, and grains are hung to the trap.

2.3 *Buhu drah* (pit-trap)

It is generally used for large mammals like tigers and bears to protect livestock and is usually set up near the village settlement. Even though Buhu traps are set up to target wild animals, if proper care is not taken, even human beings or domestic animals can get trapped or fatally injured. The preparation of this trapping technique begins with digging a big rectangular pit of about $1\text{ m} \times 1\text{ m} \times 1.5\text{ m}$ (length $\times$ breadth $\times$ height) in the ground. However, the length may vary depending on the size of the targeted animals. Then, bamboo sticks are cut into pieces, and both ends

are sharpened with the help of a machete. 10–15 sharp-edged bamboo sticks are then fixed vertically in the pit, which is covered with a temporary rectangular platform made by joining long, thin bamboo sticks parallel with the help of bamboo rope. A hole is created at both ends of the thin, long bamboo sticks (Fig. 4).

A rope is passed through these holes perpendicular to the axis of a bamboo stick. The surface is then covered with banana leaves to cover the pit. When animals enter and try to walk on the bamboo platform, they fall into the pit, and the vertically erected sharp bamboo sticks will result in a fatal injury. As the *buhu* trap had often led to human casualties, its use has now been banned in Mishmi villages.



Table 1 Wild animals and the traps

Sl. no	Common name	Scientific name	Idu Mishmi name	Traps used
1	Takin	<i>Budorcas taxicolor</i>	<i>ākṛū</i>	<i>Sikhembra drah</i>
2	Red goral	<i>Naemorhedus baileyi pocock</i>	<i>āmī</i>	<i>Apah drah</i>
3	Leopard	<i>Panthera pardus</i>	<i>āmṛā k̐c̐i</i>	<i>Apah drah</i>
4	Alpine musk deer	<i>Moschus chrysogaster</i>	<i>ālā</i>	<i>Apah drah</i>
5	Wild boar	<i>Sus scrofa</i>	<i>āmē</i>	<i>Sikhembra drah, Buhu, Lah drah</i>
6	Barking deer/Indian red muntjac	<i>Muntiacus muntjak</i>	<i>mānjō</i>	<i>Buhu, Lah drah, Sikhembra drah</i>
7	Himalayan serow	<i>Capricornis sumatraensis</i>	<i>māḡy</i>	<i>Apah drah Sikhembra drah</i>
8	Asiatic Black Bear/Himalayan black bear	<i>Ursus thibetanus</i>	<i>āhū</i>	<i>Buhu, Lah drah, Sikhembra drah</i>
9	Red panda	<i>Ailurus fulgens</i>	<i>āyīmīnjīmī</i>	<i>Apah drah</i>
10	Masked palm civet	<i>Paguma larvata</i>	<i>āpw̎</i>	<i>Apah drah, Deprah, Thro drah</i>
11	Yellow throated marten	<i>Martes flavigula</i>	<i>ākōkō</i>	<i>Apah drah, Deprah, Thro drah, Sikhembra drah</i>
12	Yellow-bellied weasel	<i>Mustela kathiah</i>	<i>irhīnhhō</i>	<i>Deprah, Apah drah</i>
13	Hoary-bellied squirrel	<i>Callosciurus pygerythrus</i>	<i>ādānggō</i>	<i>Adrapoh drah</i>
14	Wild dog/Dhole	<i>Cuon alpinus</i>	<i>āprūprū</i>	<i>Sikhembra drah, Adrapoh drah</i>
15	Asian small-clawed Otter	<i>Aonyx cinereus</i>	<i>ārḥō/ārḥōrhō</i>	<i>Thro drah</i>
16	Rhesus macaque	<i>Macaca mulatta</i>	<i>āmē</i>	<i>Adrapoh drah, Sikhembra drah</i>
17	Himalayan rat	<i>Rattus nitidus</i>	<i>kācīnggō</i>	<i>Apah drah</i>

2.4 Sikhembra drah

It is used for mammals like barking deer and bears. Made up of a metal wire attached to the side of a tree or bamboo, this trap is placed along forest trails, where mammals frequently pass. It is easy to set up and can be planted at any time of the year. It is still used in various parts of the northeast to trap, not necessarily kill, animals. To set up *sikhembra drah*, a metal wire is bent in a circular form, large enough to trap mammals. It is placed adjacent to trails where mammals frequently pass. One end of the wire is placed for trapping, and another is attached to the nearby tree or bamboo, as shown in Fig. 5. As the animal tries to pass through the loop, its circular section will get shorter and tighten in its neck.

3 Conclusion

The primary aim of this project was to document the trapping techniques of indigenous people in the state of Arunachal Pradesh. The information was gathered through field research in Dibang Valley, using semi-structured interviews, observation, and digital documentation. The list of mammals and traps used to capture them are listed in Table 1. They are prepared using bamboo, wood, stones, rope, and, in rare cases, metal wire. The traps are used to trap birds, fish, and wild animals. They are set up depending on the local people's traditional knowledge of the landscape and behaviour of the targeted animal. Some can be used throughout the year, while others are season-specific. In Arunachal Pradesh, people's traditional knowledge of

the landscape, forest, and animals is important and needs to be studied in detail.

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Conflict of interest The author has no conflict of interest.

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