



Some Indigenous Traditional Fishing Methods of Tharu Tribals of Lakhimpur kheri District, Uttar Pradesh, India

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Abstract

Tharu tribes of Lakhimpur-Kheri district in Uttar Pradesh developed and practiced different types of fishing methods since time immemorial. Information was collected by direct viewing and conversation to local *tharu* tribal fishermen with an intensive survey during January to November, 2013 in Participatory Rural Appraisal (PRA) mode. Indigenous traditional fishing with *Hulcar*, *Taapar*, *Thathi*, *Dhimari* and *Helka* has become sustainable way of harvesting fishes without over-exploitation of fishery resources. Over-exploitation of the fishery resources mainly *Bellamyia bengalensis* by *hand picking* fishing needs to be controlled. Fishing with poison in the streams of the region is not common but still prevalent; although it is banned in all parts of the world as well in India. The indigenous fishing methods provides the conservation and efficient utilization of aquatic resources, which are eco-friendly, less capital intensive, sustainable and gives subsistence to the many small scale tribal population of the region.

Keywords: Indigenous fishing methods, Subsistence fishing, *Tharu* tribal fishers

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1. INTRODUCTION

Fishing is the art of catching not only fishes but also the other aquatic animals, which is an age old practices carried out since time immemorial. In the past hand picking along the shore of lakes, rivers and seas were practiced to catch sedentary organisms [1]. Then the fishes were stunned and stupefied either mechanically, chemically or electrically to prevent the escape. Then over the times harpoon, spears, clamps, tongs, rakes, operation of indigenous nets, trap fishing were developed [2]. Inland fishery resources are exploited mostly by the traditional methods and gears. Selection of the fishing methods is depended on target species, fishing ground, climate and other hydro biological parameters, the methods varies from place to place [3]. Unscientific exploitation, destructive fishing gears and methods such as mosquito netting, use of explosives and toxicants etc. have cited as a reason for the declining of fishery resources and the aquatic living organisms in drastic manner [2,3]. The Lakhimpur- Kheri district is famous for Dudhwa National Park and which extends between 27.6° N & 28.6° N and 80.34° E & 81.30° E, covering area of 7,680 sq km. *Tharu* tribes are mainly concentrated in the *tarai* region of Lakhimpur- Kheri and Gonda district in Uttar Pradesh. There are more than 50,000 tribal families living in the Lakhimpur-Kheri district on Indo-Nepal border. In the district *tharu* tribal community is more concentrated in Chandan chouki area and the community always tried to hand on practicing cultivation. They are fond of fishing, aquaculture, rearing animals, chickens, ducks, pigs and goats are the some of the animals found in each and every household [8]. The *tharu* tribals employ a number of fishing methods based on indigenous knowledge system passed on by their ancestors to catch the fishes and other aquatic organism especially molluscs for food. In inland waters, indigenous traditional knowledge related to fish catching methods in India particularly Faizabad district of eastern Uttar Pradesh and some north eastern states has been well documented [2, 4-7]. However, these indigenous practices of fishing are in vogue throughout in rural India. Information on indigenous fishing methods of *tharu* tribals of Lakhimpur- Kheri district is scanty and which are yet to be documented. In this backdrop an attempt has been made to document the existing indigenous fishing practices of the *tharu* tribals of Lakhimpur- Kheri district of Uttar Pradesh.

2. MATERIALS AND METHODS

The study was conducted during January to November, 2013 in the Chandan chouki area which is about 10 km from Palia block in Lakhimpur - Kheri district on Indo-Nepal border. Air temperature in the region varies from 4°C (during winter; October to February) to 40 °C (during summer; March to June). The nights are very cold during winter and fog is very common in this season. The annual average rainfall in the district is 1,085.3 millimetres mostly in the monsoon months (July to September) [9]. The information was collected based on survey of the region, water resources, fishing operations and conversation to local *tharu* tribal active fishers of the region. The community people were contacted for collection of the traditional knowledge of fishing on the various dates, where more than 24 fishermen participated and responded. Participatory rural Appraisal (PRA) technique with a semi structured interview methods were adapted for the study.

3. RESULTS AND DISCUSSION

The *tharu* tribes mostly fishing is performed by individual in nature. The *tharu* peoples are mainly dependent for fish in wild water bodies (e.g. ponds, water logging areas). The reported fishing practices are chiefly applied for small size of fishes in this region. In general, wild water bodies well known for small size of fishes [10]. The information collected on the traditional methods is mainly for the subsistence fishing by the *tharu* tribal's during the study is as follows:

1. **Hulcar** is a type of hand operated circular scoop net fabricated with a circular metal frame (2.0 – 4.0 mm dia) fitted with a netting materials usually made of cotton or indigenous fibre with a mesh of 0.5- 2.0 mm size. This fishing method is mostly used for the domestic consumption and is practiced in the shallow pool area of the stream and rivers where the fishermen can move easily for capturing the small fishes like *Puntius* sp., *Chela* sp., *Colisa* sp., etc. On an average 1.0 – 6.0 kg fishes can be caught in a day by a single fisher. The cost of fabricarion of *Hulcar* varies between ₹ 150.00 – 200.00. This net is usually operated by tribal women and the children in the area (Fig. 1).

2. **Tapaar** is dome shaped trap made up of 6 bamboo or wooden sticks. The trap is arranged in such a way that lower end makes the shape of polygon, which is tightened with each other with a nylon rope where actual netting material is woven which forms the conical shapes with mesh size of 12.00 -15.00 mm. The top end is tightened in such a manner so that end of the bamboo or wooden sticks meet together in circular fashion and are tightened with the help of a metal frame. The height and the circumference of the trap vary from 0.8-1.2.0 m and 0.5- 1.0m respectively (Fig. 2). A circular opening is provided about 30.0 -60.0 cm in diameter in the top of the trap for the entrance of the fishes. The fishers carry the trap and drive it on the surface of the water if the presence of the fishes is noticed; they cover the area with the trap and collect the fishes from the top. This trap is mainly used in big water bodies to catch table sizes fishes like *Catla catla*, *Labeo rohita*, *Ctenopharyngodon idella* etc. Sometimes the fishers use this trap in the rivers where water velocity is very less. On an average 5.0 -15.0 kg fishes can be caught in a day by a single fisher. The cost of construction of *Hulcar* varies between ₹ 450.00 - 500.00.



Fig. 1. *Hulcar* a type of hand operated circular scoop net.



Fig. 2. *Tapaar* is dome shaped trap.

3. **Thathi** a dome shaped trap almost similar to *Tapaar* made up of 6 bamboo or wooden sticks. Unlike *Tapaar*, there is no circular opening at the top. During operation of this trap 4 bamboo sticks along with the net webbing is kept under the water and 2 sticks with the net above the water to catch smaller size fishes like *Puntius* sp., *Amblypharyngodon mola.*, *Channa* sp., *Colisa* sp., etc

in the shallow pool area of the stream and rivers with less water velocity (Fig. 3 and 4). The cost of construction of *Thathi* varies between ₹ 500.00-700.00. On an average 5.0 – 8.0 kg fishes can be caught in a day by a single fisher.



Fig. 3. *Thathi* a fishing trap



Fig. 4. *Tharu* tribe women operating the *Thathi*

4. ***Dhimari*** is basket shaped trap. It is made up of split bamboos strips on the horizontal and vertical sides knitted with the nylon rope to make it more rigid and strong. It is made in such a manner that the top of the trap remains tapering and flattened at bottom. Height and length of the trap varies from 0.5-1.0 m and 0.8-1.2 m respectively. There are 2 pairs of valve along the peripheral part of the sides. It is kept on the vertical position in slow flowing waters and the flow of the water made to pass through the trap and the fishes get entered in the trap through the valve. Once the fishes enter the trap they cannot escape (Fig. 5). The trap is kept in slow flowing waters for about 10-12 hrs. This trap is used to catch fishes like *Channa* sp., *Mastacembulus* sp., *Chanda* sp., *Puntius* sp., etc. On an average 1.5-3.0 kg fishes can be caught in a day by a single trap. Catches are more during the night time. The cost of construction of *Dhimari* varies between ₹ 200.00-300.00.

5. ***Helka*** is a type of hand operated semi circular scoop net fabricated with a semi circular wooden frame which is woven with a netting materials usually made with cotton or indigenous fibre with a mesh of 0.5- 2.0 mm size (Fig. 6 and 7). This fishing method is mostly operated mainly in the marshy areas by the *tharu* tribal women to catch fishes like *Channa* sp., *Colisa* sp., *Osteobrama*., *Rasbora* sp., *Puntius* sp., etc. On an average 1.0 -3.0 kg fishes can be caught in a day by single fishers. The total cost of construction of *Helka* varies between ₹ 150.00-250.00

6. ***Hand picking*** is simple method of catching fishes by hand. In the region hand picking is practiced to catch the sedentary aquatic organism mainly molluscs like *Bellamya bengalensis*. The *tharu* tribal community make delicious indigenous food item from *Bellamya bengalensis* (Fig. 8). Apart from this indigenous fishing methods gill nets, drag nets, cast nets of different mesh size and dimension are also in vogue in the region.



Fig. 5. *Dhimari* is basket shaped trap.



Fig. 6. *Helka* is hand operated semicircular scoop net



Fig. 7. Tharu fisherwomen after fishing with *Helka*.



Fig. 8. A haul *Bellamyia bengalensis* by hand picking in the region

With the highly diversified nature of the aquatic resource of the region, the methods of fishing range from catching with hand to the operation of indigenous nets are adopted for fishing and still a number of old traditional methods are in vogue in the region. Selection of fishing methods and gear are influenced by the various factors such as physiography of the water body, nature of the stock, characteristics of the material from which gear are fabricated and the standard of living [11]. A number of traditional fishing methods have been reported from the various parts of the country [2-7, 11]. *Tapaar* and *Thathi* are very old traditional methods of fishing in this region. *Dhimari* is a type of trap which is called *Bosna* or *Diar* in some parts of Assam with slight modification in construction, the principle of gear operation and materials remains the same [12]. In *hand picking fishing* by the tharu tribal women carry the fishing operation without any consideration to the sustainability of the molluscan resources mainly *Bellamyia bengalensis*, which may lead to the dwindling of the aquatic resources from the region. The traditional methods of fishing with less construction cost and made up of locally available gear material develop the sustainable way of harvesting fishes, which is important in the conservation of aquatic resources by harvesting a sizable fishes and allowing juvenile fishes to escape and grow further in this tribal region. There are other gears like cast net (*Fhekua jal*), Mosquito net (*Ghaghi jal*) Gill net (*Chundhi jal*) is also in operation in the region. Fishing with poison in the streams of the region is not common but still prevalent; although it is banned in all parts of the world as well in India. Ban on the use of poison should be enforced. Protection of the aquatic biodiversity with responsible and sustainable fishing should be encouraged among the tharu tribal community of the region. An African proverb says “when an old knowledgeable person dies, a whole library dies” indicating the importance of this tradition fishing practices which is stored in people’s memories and activities & expressed in the form of stories, songs, folklore, proverbs, dances, myths, cultural values, beliefs, rituals community laws, local languages and taxonomy, agricultural practices, equipment materials, plant species and animal breeds [2]. The individual fishing activities are more helping for management of fish stocks and monitoring of overexploitations [13, 14]. The indigenous fishing methods provide for the conservation and efficient utilization of aquatic resources, which are eco-friendly, less capital intensive, sustainable and gives subsistence to the many tribal population of the country, thus need to be documented.

4. CONCLUSION

Most of the fishing gears are practiced since time immemorial in the region which is socially desirable, economically affordable and gives the subsistence to the larger section of the economically backward tharu tribal community should be encouraged. Ban on the use of poison should be enforced. Over-exploitation of the fishery resources mainly *Bellamyia bengalensis* by *hand picking* fishing needs to be controlled. Eventually, these ITK would ensure long term sustainability, biodiversity protection in terms of the inland fishery resources.

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