

Golden Research Thoughts

Abstract:-

An indigenous fish trap called 'Kuin' was discovered from Venna and Urmodi rivers in the Satara region of Western Ghats. This trap was built by tribal people using natural materials available in adjacent areas, making it cost efficient. A participatory research method of discussion, semi-structured interviews and onsite surveys with these tribal people revealed an interesting fact that even though these tribal were illiterate, they took care of avoiding gravid brooders and seedlings of fishes being trapped, thus maintaining their natural stock. Such an efficient well managed contraption is an innovative method of fish capture which has been practiced in this area for many generations.

AN INDIGENOUS FISH TRAP 'KUIIN' FROM THE SATARA REGION OF WESTERN GHATS



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Keywords:

Indigenous fish trap, Satara region, Western Ghats, tribal people, fish capture.



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INTRODUCTION

Satara district is blessed with wide range of water bodies, as springs, streams, rivers and artificial reservoirs. There are three major rivers in this region namely Krishna, Venna and Urmodi. Along the rivers Venna and Urmodi, there resides a scarce population of tribal people relying on fish as an integral source of their diet and income. Fishes in these rivers are available in plenty during the rainy season than in winter or summer season, they seems to exhibit perennial water flow. In this area tribal communities have evolved different gears and fishing methods depending on the site of operation. Until now, various studies throughout the India have reported number of methods of fish capture namely use of hook and line, traps, small and large nets of different kinds (Gurumayum & Choudhury, 2009; Manna et. Aal, 2011; Lalthanzara and Lalthanpuui, 2009). These traditional or indigenous traps are made of locally available natural material made up of either bamboo splits or Arhar, where construction cost is less. Similar type of fish traps namely, *Taap*, *Gaanj*, *Parha*, *Gadia*, *Khanchi habe* have been reported from eastern region of Uttar Pradesh (Prasad et. al., 2013). Also, *Pari*, *Katcha* and *Ootha* are indigenous traps made up of the bamboo in Tamil Nadu (Rathakrishnan et. al., 2009). Construction and operation of these traps does not require much technicalities and can be easily adopted.

These traps can be optimized and utilized cost efficiently by using natural material available in the adjacent region. Depending upon the skill of the tribal people for construction of the gear using natural degradable material and their strategy in the fish catch, an interesting traditional trap '*Kuin*' has been mentioned in this study. The raw material used for its construction comes from surrounding area constituting natural resources, thus making trap cost efficient. Increase in the quality of materials used for construction of gears has led to the increase in its efficiency. Finally, the most important fact that the tribal catch constitutes of fingerling or adult fish, thus excluding brooders and fish seedlings. The detailed study of trap reveals one of the most indigenous methods of fish capture.

STUDY AREA AND METHODS

The study was conducted in the Satara city and its adjacent regions of Satara district in Maharashtra state. The trap was first observed in the small stream of Venna river at the outskirts of Satara city (site 1, figure 1). Information regarding construction and working of the trap was collected from the tribal people through participatory method of discussion, semi-structured interviews and onsite surveys. Observations were recorded for two years during the month of July and August, which is considered as an operational stage of this trap. Throughout the study necessary photographs were taken during construction and working of the trap (Image 1 to 4).

OBSERVATIONS

The trap studied is a fully functional unit, which practically includes many such sets of traps constructed in shallow water arranged one below the other in an order to cover width of the stream. Similarly, the neighboring streams are also engaged by such kind of traps occupying areas with shallow water flow. The map shows sites surveyed during this study representing location of traps in the Satara region (figure 1).

I. Selection of site

The construction of trap was carried out along the natural slope of river, where the water flows is steep. The difference in height of trap along the steep slope and ground is more than four to five feet. The length of small trap from its upper reach to lower reach is four to five feet (figure 3 and Image2), while in large trap it is about ten to twelve feet (figure 2 and image 1). The trap area is then cleared to allow smooth flow of water by removing its obstructive rough edges. The cleaning of sites is carried out after the first heavy rainfall near onset of monsoon. Such sites are selected for setting a trap and are being used for years together.

II. Construction of trap

A. Large '*Kuin*' trap

At the selected site two pillars are constructed on the lower side of the slope by using small branches of '*Karanj*' tree (*Pongamia pinnata*). They are tied using the stem of runner plant that is locally available in the adjacent areas. In the space between the branches large sized stones are arranged. Filling the gaps with small stones a pillar is completed. The distance between the two pillars is seldom more than 6 feet (figure 2). In the next step platform is constructed using branches of the same tree. The platform is about six to eight feet broad touching the two pillars and ten to twelve feet long depending on the slope (figure 2). Below the platform, three or more large sized sieved baskets called "*Sherni*" made up of local shrub called "*Ran kanher*" (*Homolia riparia*) having bamboo (*Dendrocalamus sps.*) opening are tied with the pillars for trapping and collecting the fishes. The efficiency of the trap varies according to the seasonal variation and flow of water current, overall fish catch estimated is about 5 to 10 kg/day.

B.Small 'Kuini' trap

The construction of small 'Kuini' trap is similar to that of large trap, which includes single "Sherni" basket a bamboo sieve fixed between two pillars. The platform of this trap is small about five to six feet in length and breadth. The efficiency of small trap depends upon seasonal variation and water flow could be estimated about 2 to 3 kg/day.

III. Working of trap

After the first rains surface runoff, water flowing along the stream passes downstream from the platform between the two pillars. As the water becomes muddy, turbidity of the water increases then downstream fishes migrate upstream for breeding. The fishes swim upwards between the pillars and reach their breeding grounds located upstream. This migration continues for one or two days then height of the platform is adjusted according to the surface of water. Now, all the flowing water has to pass over the platform (Image 1) falling between the two pillars. In between the platform at a distance of about two feet hollow bamboos are inserted that acts as funnels entering into the collection basket (Sherni) (figure 3). Now the backwater of the platform is blocked with stones and silt and water is diverted towards the platform. So, all the water flowing downstream has to pass from the platform entering the bamboo funnels filtered through the baskets trapping fishes and other small organisms coming along the slope. The mesh size of the basket is such that fish seedlings can easily pass through it and only adult sized fishes are trapped.

The study reveals that the people in this area are quit conscious to protect the biological resources, which is reflected through their awareness during construction of the trap, allowing seedling and brooders to get mature and breed. The indigenous knowledge associated with making eco-friendly, cheaper, locally and easily available traps should be encouraged so that tribal people can pass their knowledge through generations.

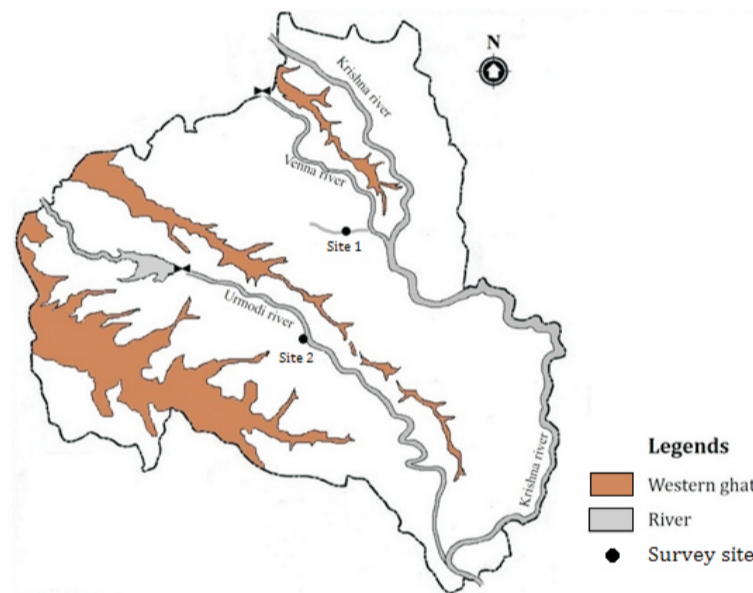


Figure 1. Sites in the Satara region where the traps were observed.

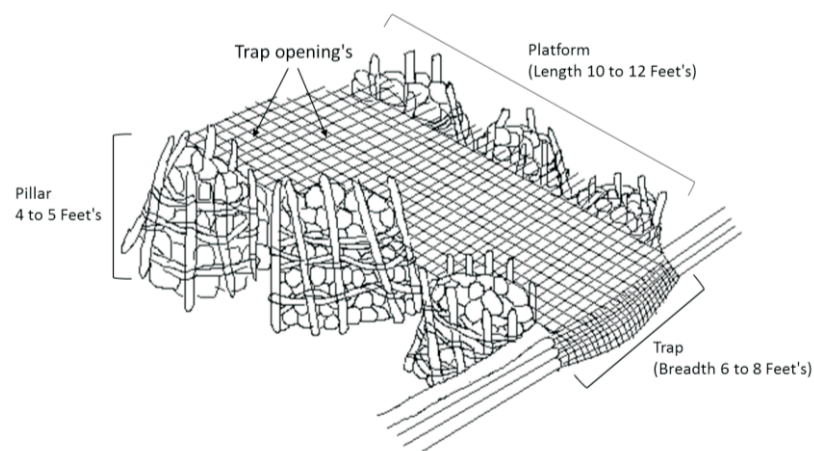


Figure 2. Construction of large 'Kuini' trap made for large scale fishing (3 to 10 kg/day).

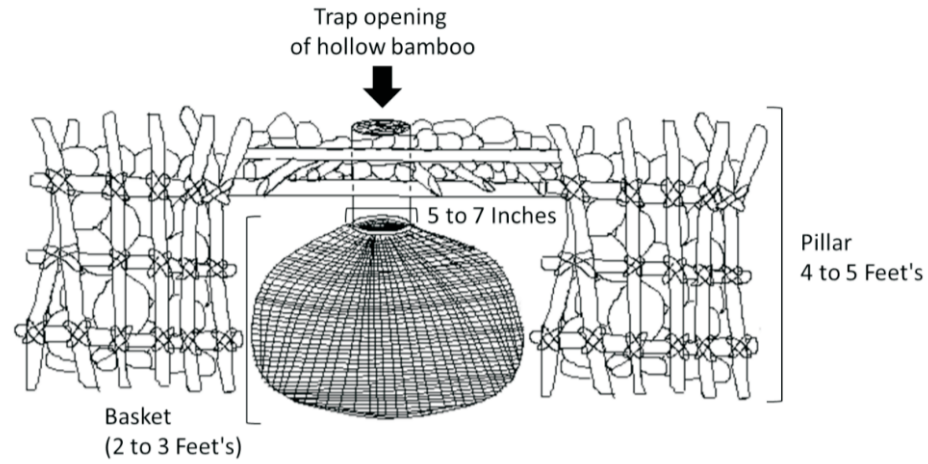


Figure 3. Construction of small 'Kuini' trap for small scale fishing (2 to 3 kg/day).



Images. 1. Large *Kuini* trap constructed at fish catching site, 2. Small *Kuini* trap constructed at fish catching site, 3. Working of *Kuini* trap, 4. Basket used in trap for trapping and collection of the fishes.

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