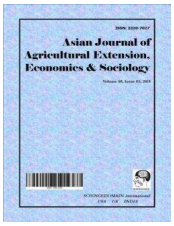

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Traditional Fish Traps and Indigenous Fishing Devices of North Malabar Region of Kerala

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Author's contribution

The sole author designed, analyzed and interpreted and prepared the manuscript.

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ABSTRACT

The present study was carried out to document the various kinds of indigenous traps and fishing gears used in 20 river systems covering three districts of North Malabar region of Kerala. The use of indigenous traps such as box traps namely "*Chemballi Koodu*", and other fishing gears and methods such as *Komma*, Njandu Kothhi, *Challam* and *Chemeen Kori,* their dimensions, fabrication and methods of operation are discussed in this study.

Keywords: Indigenous; traps; fishing gears; river systems.

1. INTRODUCTION

Fish traps are devices to ensnare fishes in to artificially constructed enclosures made of locally available materials in such a manner that fishes have absolutely no escape once they enter these structures. Various authors have described on the working of these traps [1,2,3]. Traps are impounding devices in to which an organism is lured and the escape from which is difficult

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because of the non return device fixed at the entrance [4]. The idea of catching fishes effortlessly must have contributed to the origin of fish traps [5]. Trap fishing is highly fuel efficient both in terms of returns and biomass per unit of fuel consumed [6]. Traps are effective in luring fish continuously during day and night with periodical checking and the organisms can be retrieved alive without any damage. In capturing fishes by using traditional methods such as traps these methods give twice as much return per unit of investment when compared to the mechanized sector.

The following paper discusses the different types of fish traps, their structure, design and methods of operation.

2. METHODOLOGY

The districts of Kozhikode, Kannur and Kasaragod of North Malabar region were selected for the study conducted during 2015-16. These districts form a prototype of a wide array of indigenous traps and gears used in fishing in the estuaries and rivers. 20 river systems and ten *Panchayaths* in each of these three districts were surveyed for identifying and documenting the different unique types of indigenous traps and fishing gears. (Fig. 6) A *Panchayath* is a grass root level unit of local self governance at the village level in India. The river systems surveyed were Manjeswar river, Uppala river, Shiriya river, Mogral river, Chandragiri river, Chithari river, Nileswar river, Kariangode river, Kavvayi river, Peruvamba river, Ramapuram river, Kuppamriver, Valapatanam river, Anjarakandy river, Tellicherry river, Kuttiadi river,, Korapuzha river, Kallai river, Chaliyar river and Kadalundi river. The data was collected using a well-structured interview schedule and by using focus group interview discussion from a group of 15 fishermen from each *Panchayath* totaling up to a sample of 150 fishermen respondents in all.

3. FINDINGS AND DISCUSSION

3.1 *ChemballiKoodu*

It is essentially a box trap operated commonly in rivers for catching fish especially in Cannanore and Kasaragod districts of Kerala (Fig. 1). The box trap derives its name from "*Chemballi*" means Red snapper fish (*Lutjanus argentimaculatus*). Box traps are a common feature in the upper reaches of Kuppam, Valapatanam and Peruvamba river in Kannur and Kariangode, Chandragiri and Mogral rivers of Kasargod district whereas these types of traps are not observed in Calicut district [4]. The operation of *Chemballikoodu* was observed in *Palakudu* near *Payangadi* of Kannur district of Kerala. *Chemballikoodu* is a basket shaped traditional fish trap. The trap is made of splinters from green bamboo wood and is bound with nylon twines. It has three doors for entry of fish and another one for collecting the fish from inside. Its base is rectangular and has a height of about 1-2 feet. These are bottom traps. The funnel like compartment inside the box is an efficient trap for fishes. Mostly the three types of fishes commonly caught in these traps are Red snappers (*Lutjanus argentimaculatus*) Kachai-Spotted argus *(Scatophagus argus)* and Grass carp (*Ctenopharyngodon idella*) locally called *"Amur"*. At a time *six* kilograms of fish are caught in this trap. Two fishermen are needed to submerge the trap under water. This box trap measures 2.5 feet in breadth and 3 feet in height. The doors of this trap are fitted with nylon mesh nets. The cost of the nylon mesh net is Rs 160/meter. This trap weighs around 30 Kg. The traps are made by the local fishermen and the total cost of fabrication of these works out to be Rs. 6000/unit. The market price of Red snappers is Rs. 300/Kg. The fish has good market demand and commands a premium price in the market as it figures high in the consumer's demand. Two stones weighing about 5 kg each are attached on either side of the trap to prevent it from drifting. A 5-6 m length of rope is tied to the trap at one end and to the other end a small stone is attached. Traps are set in 4-10 m and while launching the trap, the attached line is pulled and stretched to its fullest length to facilitate hauling back of the trap. Hauling is done is after three days period once launched in water and is carried out during the night. The structure and dimensions of the box trap were described by earlier authors [4]. *ChemballiKoodu* is made up of split bamboo or areca nut wood splinters with a dimension of 1.4 x 0.6 x 0.6 m. The bottom portion is rectangular in shape and is fabricated using 10-15 strips having 1.4 m length and 30-35 pieces of 0.6 m length kept perpendicular to the first set. The strips are joined together using 3-4 mm diameter coir twines. The curved roof portion of the trap is constructed using about 30-35 strips having 1.4 m length held together using coir ropes. There are two funnel shaped valves fitted on either end of the trap. The non-returnable valves

are constructed using 15-18 number areca nut stem splinters each having 0.35-0.4 m length. One end of each piece is cylindrical in shape having 2-2.5 cm in diameter and the thickness gradually tapers to a sharp point at the other end.

While launching the trap, care is taken to see that stones and rocks are not present beneath the traps when launched.

3.2 Stick Held Scoop Nets

3.2.1 *Komma*

This is a traditional fish trap equipment used at night. (Fig. 2) While fishing, fishermen use beam light. In this type of fishing, a variety of fishes such as "*Erimeen, Karimeen*" (Pearl spot, *Etroplus suratensis*) are trapped in this device. Usually two men are required for operating this method. Fishermen of Chuttad village of Kannur district of Kerala follow this method. The oval shaped frame of the net is made using l-3 mm diameter mild steel rods and its size ranges from 20-35 cm diameter. It has a wooden handle which is 1-1.5 meter in length. Net is made of PA mono or multi filament with 20-40 mm mesh size. *Komma* is operated at a depth of 0.5-1 metre in water. Prawns, crabs, pearl spot, lady fish (*Nangol*) are the important fishes caught in this. Net is attached to 1-1.5m long and 10-15mm diameter bamboo or other light wooden poles. Two fisher men operate the net from a canoe during moonless nights with the help of powerful torchlights. The powerful beam of light stuns the fish and captures them unawares in the net [7]. Fisherman standing near the bow holds the net in the right hand and torchlight on the left. During the course of the operation one fisherman slowly paddles the canoe along the shore without disturbing the water, while the other man looks for the fish from the front. When a fish is sighted in the striking range it is scooped out with a quick motion. There are instances where the use of light from petromax was being used to attract fishes in to driving them in to a scoop net [8].

Fig. 1. The structure of "*ChemballiKoodu*" (Box Trap)

3.3 Crab Piercer

3.3.1 *Njandu Kothhi*

This is a straight rod made out of iron. The tip of the iron rod is very sharp and pointed. The rod has a wooden handle. The iron rod measures 1.5-2 m in length and 2-4 mm in diameter (Fig. 3). This is used to dig in to the burrows of the crab and once the crabs are located, the iron rod is pierced in to its body and the crabs are collected from the rod. Capturing crabs using the hooked end of iron rods is done in Sunderbans. [9]

3.3.2 Sticks (*Challam*)

This is a long stick used by fishermen to thrash in to the water. When the stick is thrashed in to the water, the fishes underwater will emerge on the surface (Fig. 4). This facilitates the fishermen to catch more fish. From ancient times fisher folk of Kasaragod district of Kerala use this method. This method is used for catching Gerres species (*Payya*) and lady fish (*Elops affinis*).

3.4 Stick Held Drag Net

3.4.1 *Chemeen Kori*

Chemmeen Kori consists of a net which measures 7 feet in length and a long wooden pole attached to it with a length of 7.5 feet (Fig. 5). Koruvala is seen operated in Chithari River, in Kasargod and its operation is similar to that of a simple drag net. Two fishermen hold both side of the mouth of the net and a third person from the center. The net is dragged in to shallow waters keeping the ground rope at the bottom with the help of the foot and is operated at a depth of 3-4 meters. The ends of the net are lifted and the men come close together gathering the sticks quickly such that the catch is collected in the center of the bag. Periodically they lift the net and wash the content to collect fishes. Prawns and small varieties of fishes form the major shares of the catch. As the local name indicates it is mainly used to capture "*Chemeen*"(prawns) from estuaries. Fishing is very easy in this method. Fishermen use this throughout the season for fishing which helps to capture a wide variety of fishes.

Fig. 2. *Komma* in operation

Fig. 3. Use of crab piercer by fishermen

Fig. 4. A fisherman with a *"Challam"*

Fig. 5. *Chemmen Kori*

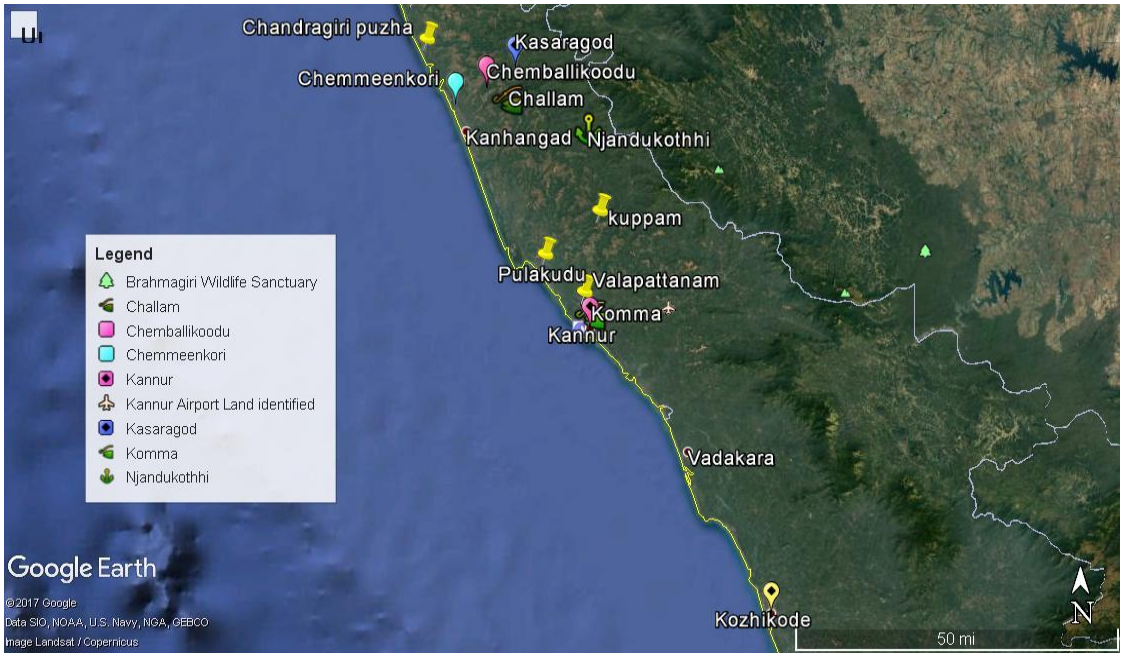

Fig. 6. Map of the study area

4. CONCLUSION

The rivers of North Kerala harbor many interesting, complex yet important indigenous fishing traps and gears which have been handed down generations to posterity and which has stood the test of time and defied the primacy of modern fishing devices. They score high in their sustainable fishing practices and have been followed for centuries in these areas. The wide array of indigenous fishing traps and gears offer ample scope for reinvention in their design and fabrication to enhance the easiness and quantity of catch of fish, crabs and shrimp in these traps and gears, reduction in time and reduce monotony in operation. Enhancing the productivity of these water bodies through suitable stocking programmes by the State Department of Fisheries and providing large scale awareness programme for the inland and estuarine fishermen on sustainable fishing methods would go a long way in augmenting fisheries production as well as efficient and effective use of these precious resources.

COMPETING INTERESTS

Author has declared that no competing interests exist.

REFERENCES

1. Willimovski NJ, Alverson DL. The future fisheries. In: Kristjonsson, H., (ed.). Modern fishing gear of the World. Fishing News (Books) London. 1971;3:509-513.
2. Nair PR. Fishing with traps. In: Low Energy Fishing. Fish. Technol. (Special Issue) Society of Fisheries Technologists (India), Cochin. 1993;207-209.
3. Mohan Rajan KV. Fish trapping devices and methods in Southern India. Fish. Technol. 1993;30:85-93.
4. Remesan MP, Ramachandran A. Fish Traps in Inland Waters of North Kerala. Fishery Technology. 2008;45(2):137–146
5. Baruah Deepjyoti, Dutta Amalesh and Pravin Puthran. Traditional fish trapping devices and methods in the Brahmaputra valley of Assam. Indian Journal of Traditional Knowledge. 2013;12(1), January 2013;123-129. Hindustan Publication Corporation, Delhi. l92p.
6. Kristjonsson H, Modern Fishing Gear of the World, (Fishing News International, London). 1971;509.
7. Anand, Vijay PE. Fishing Methods in Lakshadweep. (Infofish International). 1996;3:57-65.
8. Kurup NS, Sarada PT, Menon KK, Lakshmi S. Low energy fishing methods for the prawn fishery of Calicut, Kerala. In: Low Energy Fishing, Fish. Technol. (Special Issue), Society of Fisheries Technologists (India), Cochin. 1993;130-136.
9. Nandini NC, Pramanik SK. Crabs and Crab fisheries of Sunderban; 1994.

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