UNDER PEER REVIEW

Traditional Fish traps and indigenous fishing devices ofNorth Malabar region of Kerala

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 indigenhous traps such as box traps namely "ChemballiKoodu", and other fishing gears and methods such as *Komma*, NjanduKothhi,Challam and ChemeenKori , their dimensions, fabric.ation and methods of operation are being discussed in this study.

Keywords: Indigenous, traps, fishing gears, river systems

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. Traps are impounding devices in to which an organism is lured and from which escape is difficult because of the non return device fixed at the entrance.[6] The idea of catching fishes without much effort must have resulted in fish traps.[2]Trap fishingishighlyfuelefficient both intermsofreturnsbiomassperunitoffuel consumed.[1] Traps can fish continuously during dayand night with periodical checking and the organismscan be retrieved alive without any damage. In capturing fishes by using traditional methods such as traps these methods give twice as much returnsperunit of investment when compared to themechanized sector.

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

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 ineach of these three districts were surveyed for identifying and documenting the different unique indigenous types of traps and fishing gears. The river systems surveyed were Manjeswar river, Uppala river, Shiriya river, Mogral river,Chandragiri river,Chithari river, Nileswarriver,Kariangode river, Kavvayi river,Peruvamba river, Ramapuram river,

UNDER PEER REVIEW

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.

Findings and Discussion:

Chemballikoodu:It is essentially a box trapseen commonly used in rivers for catching fish empallyespecially in Cannanore and Kasaragod districts of Kerala. The box trap derives its name from "***Chemballi***" means Red snapper fish (*Lutjanusargentimaculatus*). 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 Kasargoddistrict where as these types of traps are not observed in Calicut district.[6](Remesan et.al, 2008) The operation of *Chempallykoodu* was observed in *Palakudu* near *Payangadi*of Kannur district of Kerala.Chemballikudu 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 (*Lutjanusargentimaculatus*) Kachai-Spotted argus *(Scatophagusargus)* and Grass carp (*Ctenopharyngodonidella*) locally called *"Amur"*. Ata time *six* kilograms of fish are caught in this trap. Two fishermen submerge the trap in 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 Kgs. The trap can be made by the local fishermen and the total cost of fabrication works out to be Rs. 6000/trap. The market price of Redsnappers is Rs.300/Kg.The fish has good market demand and commands a good price in the market as it figures high in the consumers palate. 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 smallstone 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

UNDER PEER REVIEW

and dimensions of the box trap was described by earlier authors.[6]*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. There are two funnel shaped valve fitted on either end ofthe trap. The non-returnable valves are constructed using 15-18 number areca nut tree 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 which are launched.

The structure of "***ChemballiKoodu***" (Box Trap)

UNDER PEER REVIEW

Stick held Scoop nets *:Komma:*

This is traditional fish trap equipment using in the night. While fishing fishermen use beam light. In this type of fishing, "*Erimeen, Karimeen*" (Pearl spot, *EtroplusSuratensis*) variety of fish are trapped in this device.Usually three 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 metre in length. Net ismade of PA mono or multi filament with 20-40 mm mesh size. *Komma* is operated at a depth of 0.5-1 metre in the water. Prawns, crabs, pearl spot, lady fish (*Nangol*)are the important fishes caught in this.Net is attached to a 1-1.5m long and 10-15mm dia bamboo or other light wooden poles.Two fisher men operate the net from a canoe during moonless nights with the help of a powerful torchlight. The powerful beam of light stuns the fish and captures them unawares in the net.[1]Fisherman standing near the bow holds the net in the right hand and torchlight in the left hand. During operation one fisherman slowly paddles the canoealong the shore without disturbing the water, while the other man look for fish fromthe front. When a fish is sighted in the striking range it is scooped out with a quickmotion.There are instances where the use of light from petromaxwas being used to attract fishes in to driving them in to a scoop net.[4]Kurupetal (1993)

UNDER PEER REVIEW

***Komma* in operation**

Crab Piercer :*NjanduKothhi*: 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 has a length of 1.5 — 2 m and 2 - 4 mm diameter. 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 form the rod. Capturing crabs using the hooked end of iron rods is done in Sunderbans.[5]

Use of Crab Piercer by fishermen

UNDER PEER REVIEW

Sticks *:Challam*This is along stick used by fishermen to thrash in to the water. When the stick is thrashed in to the water, the fishes underwater will come upward. This facilitates the fishermen to catch more fish. From ancient times of Kasaragod district of Kerala usethis method. This method is used for catching Gerres species (*Payya*)andlady fish.(*Elops affinis*)

A fishermen with a*"Challam"*

Stick held Drag net:***ChemeenKori***

ChemmenKori has a net which has a length of 7 feet and it has a long wooden pole having a length of 7.5 feet. Koruvala is seen in Chitharириver, in Kasargod and its operation is similar tothat of a simple drag net. Two fishermen hold both side of the net mouth and the third person from the center. The net is dragged in shallow waters keeping the ground rope at the bottom with the help of the foot. The net is operated at a depth of 3-4 metres. 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 thecatch. 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 always in all seasons for fishing and helps to capture a wide variety of fishes.

UNDER PEER REVIEW

ChemmenKori

Conclusion:

The rivers of North Kerala harbor many interesting, complex yetimportant indigenous fishing traps and gears which have been handed down generations to posterity and which has stood the test of time and defiedthe 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.

References:

1. Anand, Vijay P.E. 1996. Fishing Methods in Lakshadweep. (Infofish International), 3: 57-65.
2. BaruahDeepjyoti, DuttaAmalesh and PravinPuthran. 2013 Traditional fish trapping devices and methods in the Brahmaputra valley of Assam. Indian Journal of Traditional Knowledge Vol. 12 (1), January 2013, pp. 123-129
   Hindustan Publication Corporation, Delhi. l92p.
3. Kristjonsson H, Modern Fishing Gear of the World, (Fishing News International, London), 1971, 509.
4. Kurup, N.S. Sarada, P.T. Menon, K.K. and Lakshmi, S. 1993. Low energy fishing

UNDER PEER REVIEW

methods for the prawn fishery of Calicut, Kerala. In: Low Energy Fishing,Fish. Technol. (Special Issue), Society of Fisheries Technologists (India),Cochin: 130-136.

5. Nandini, N.C. and Pramanik, S.K. 1994. Crabs and Crab fisheries of Sunderban.
6. Remesan M.P and Ramachandran, A. 2008.Fish Traps in Inland Waters of North Kerala. Fishery Technology. 2008, Vol. 45(2) pp : 137 - 146