

Chinese dipnet-cum-cage culture in Cochin backwaters

Dhiju Das P. H.*, Sandhya K. M. and Remesan M. P.

ICAR- Central Institute of Fisheries Technology, Cochin-29

** dhijudas@gmail.com*

Cochin backwaters and adjoining coastal water bodies in Kerala are one of the richest areas of fish production. Thousands of people around the water body find their livelihood from fishing in the lake. Several types of fishing gears are in operation along the lake targeting all kinds of fishes including juveniles. Among the fishing gears operated in these backwaters, Chinese dipnet, commonly known as 'Cheenavala' is a popular one owing to its structure. Chinese nets operated in the backwaters have reached its present stage of development through gradual evolution from a simpler contrivance for sustenance fishing to the one which is operated on a commercial scale. This gradual development has been attained through the ingenuity of the fishermen who strive to achieve better efficiency, based on their practical knowledge of the gear and the fishery.

Considering the commercial significance of this gear and the magnitude of fishermen engaged for their livelihood, a preliminary study has been conducted

for documenting the developments in Chinese dipnets, changes in fishing operations and associated issues. Study was carried out in five centres namely *Kuzhupilly, Kadamakudi, Ezhikkara, Cheranellur* and *Koonammavu* in Ernakulam district during September 2020.

Major structural modifications noticed were replacement of wooden poles of the gear with GI pipes as it is easily available, having better durability and withstand strong winds and currents. Dipnets with 22mm mesh size are operated for fishes and 16mm mesh size for shrimps. Refurbished bike engine with pulley system were used for lifting the nets which were done manually earlier days, is another noticeable change in a few units. Use of white or yellow coloured LED lights (9 -90w) instead of kerosene lamps for attracting fishes is very common now. Similarly raw or fried cattle feed is used as attractant by some fishermen to increase the catch.



Dip net night fishing using light in Cochin back water

Currently the fishery is facing a lot of problems due to various reasons. Floating aquatic weeds choking fishing nets is a severe issue in Cochin backwaters. As per recent reports few dipnets along with supporting structure and platform were almost fully damaged due to huge quantity of floating weed drifted over the net at Fort Kochi. Reducing depth of water bodies due to heavy siltation is another challenge faced by fishers operating in shallow regions of backwater. Proliferation of jellyfish in the lake during the months from June to September or even beyond affect the fishing operations and fishers stop fishing during this period.

Juvenile catch is a concern in dipnet fishery due to the use of small mesh webbing. To overcome the issue the *Cheenavala* fishers had started a new method of capture-based cage culture system. Small sized high values fishes captured in dipnets were transferred for culturing in cages installed below or adjacent to the platform of the dipnet. *Caranx* sp. (*Vatta*), *Lutjanus* sp. (*Chempalli*), *Etroplus suratensis* (*Karimeen*) and other commercially important fishes were mainly stocked in the cages. One to three cages were erected nearer/below a *cheenavala* platform. Fishes transferred into the cage for fattening were fed with trash fishes/shrimps and during off season slaughter house waste were also used as feed.

Two walled cages with 3.5m x 3.5m x 1.5m in size are seen in one of the units selected for the study. Outer cage is made of HDPE webbing of 20 mm mesh size with 6 mm twine size (cage size is 3.5m x 3.5m x 2.0 m) and inner cage with PA webbing of 12 mm mesh size with 3 mm twine size (size is 3.0m x 3.0m x 1.5 m). Usually, *chempalli* and *karimeen* were kept in between the inner and outer cages and other high value fishes were kept in the inner cage, which helps to minimize the algal growth in the outer and inner cage walls and allow free flow of water.

Fishes stocked in the cages were shown better growth rate and cages require minimum or no maintenance. As seed and feed are available free of cost, at present fish fattening is popular among the *cheenavala* fishers.

Though catching fishes below minimum legal size is not recommended, growing juveniles caught in dipnets to marketable size will improve the economics of Chinese dipnet fishermen, who are facing lot of problems to earn their livelihood. More cages may be erected in the vicinity of stationery gears like Chinese dipnets and hatchery produced seeds may be stocked in the cages to make the venture more economical.



A cage installed below the platform of Chinese dip net