On-field experimental trials using grids with different spacing are required before the results can be up scaled for experimental trials in commercial trawls.

FS PO 06

Bycatch and discards in stake nets off Kumbalam, Cochin backwaters, India

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Stake nets are important gear used for exploiting the brackish water prawn fishery of Kerala. Consequent to the uncontrolled proliferation of these nets, Govt of Kerala stopped issuing fresh licenses from 1983 onwards to install stake nets. These nets were reported to be a threat to the fishery as huge quantity of juvenile are caught. Though codend mesh size of the gear was optimized as 24 mm by ICAR-CIFT, the mesh size has been reduced over the years. In this context, an effort has been made to study the catch composition, and bycatch characteristics by selecting 11 stake nets operated off Kumbalam in Cochin backwaters. The species composition and size composition of catch, bycatch and discards were recorded fortnightly for 12 months from January to December 2012. The mesh size of the gear was six mm which is extremely small in size. Prawns constituted 98% of the catch while the rest was crabs and finfishes. *Metapebaeus dobsoni* was the dominant prawn species (91%), followed by *M. monoceros, Fenneropenaeus indicus,* and *Penaeus monodon*. Finfish catch composed of 38 species representing 24 families and six orders. Species belonging to the genus *Anchoviella*, *Ambassis*, *Cynoglossus*, *Platycephalus* and *Leiognathus* were the commercially important finfishes in the catch. Crabs were represented by *Portunus pelagicus* and *Scylla serrata*. Length frequency analysis showed 80% of the catch falling under the term `juveniles'. Finfishes, crabs and juveniles of prawns were grouped under bycatch. Targeted catch formed only 13% of the total catch and the ratio between targeted catch and bycatch was 1:6. Discards included organisms which had no market value. *Mastacembelus armatus*, a snake-like fish locally known as *thondi* was the major species discarded. Stomatopods, bivalves, jelly fish and puffer fish formed the other discards. The present study once again confirms the earlier reports of the devastating effect of the stake nets on the ecosystem. Despite the Expert Committee constituted by Government of Kerala in 2001, recommended, phasing out of the stake nets in the state by 2015, the continued operation of even the unlicensed stake nets; and the use of codend mesh size of six mm are serious problems to be addressed for the sustenance of the brackish water prawn fishery.

FS PO 07

Quantitative and qualitative assessment of hook and line fishery in estuaries of Goa: a preliminary analysis

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The state of Goa has huge potential for recreational hook and line fishery. Traditionally, the hook and line fishing is carried out in the Zuari and Mandovi estuaries with an estimated total area of 60

km^2. This study was carried out to assess the hook and line fishery practised in the estuaries of Goa. A total of 250 fishers were interviewed with the help of pre-tested questionnaires during January 2016 to May, 2017. The study revealed that 32% of the fishers used FRP or wooden boats of Length Over All (L_{OA}) ranging from 8-12 m for fishing. Majority of the fishers (>70%) used rod and line with a baited hook for fishing and about 80% of these fishers used dead or artificial baits and the rest used live baits for luring. August to November is reported to be the best season for fishing. The target size of the catch varied between 50 and 150 cm. The catch is often used for own consumption (70%) and only 30% of the catch is sold in the local market. There are active (at least two complete operations in a week) and occasional recreational fishermen (twice in a month) in the state. Cost of the fishing gear varies from Rs. 1000-10000 with an average individual cost of Rs. 2800. It was observed that operation of speed boats in the estuaries was a major hindrance to the fishing operations. Operation of gillnets (according to 55% of the respondents) and plastic waste accumulation (65% of the respondents) also created disturbance to fishing. The duration of fishing operation ranges from 2 to 8 h with an average duration of 3.5 h. The catch per unit of effort (CPUE) ranged from 0.1 to 30 kg/h and the average CPUE was estimates as 4.1 kg/h. A total of 71 finfish species and 3 shellfish species contributed to the fishery. Since Goa is a famous tourist centre, availability of species apt for recreational fisheries, the estuarine regions of Goa can be developed into a suitable area for recreational fisheries.

FS PO 08

Preliminary results of the trials using square mesh panels in trawl codend along Cochin coast, Kerala

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Bycatch is an important issue in shrimp trawling. The ratio of shrimp to bycatch generated during shrimp trawling is reported to be as high as 1:7 along the South west coast of India. Increasing the size or shape of the meshes of the codend is often attempted to improve the selectivity of the gear. This study reports the preliminary results of the trials carried out using square mesh panel in a shrimp trawl. The study was conducted onboard Departmental Vessel FV Matsyakumari-II of ICAR-CIFT, during November 2016 to May 2017, in the commercial fishing grounds of single day fishing trawlers. The depth of the trawling area was between 10 and 30 m. The experimental net consisted of a 40 mm square mesh panel of (1x1 m) dimension, which was approximately 8.5% of the total area of the codend, inserted on the dorsal of the forward part of the codend. The opening of the panel was covered using 10 mm polyamide webbing to quantify the escapees. A total of 15 valid hauls were carried out using the experimental net. The average catch was 6.23 kg/h and the mean escapement from the square mesh panel was 0.15 kg/h (3.38% of total catch). The top five species that escaped through the meshes of the square mesh panel were *Ambassis gymnocephalus* (26.94%), *Stolephorus* sp. (21.65%), *Metapenaeus dobsoni* (13.59%), *Oratosquilla nepa*