

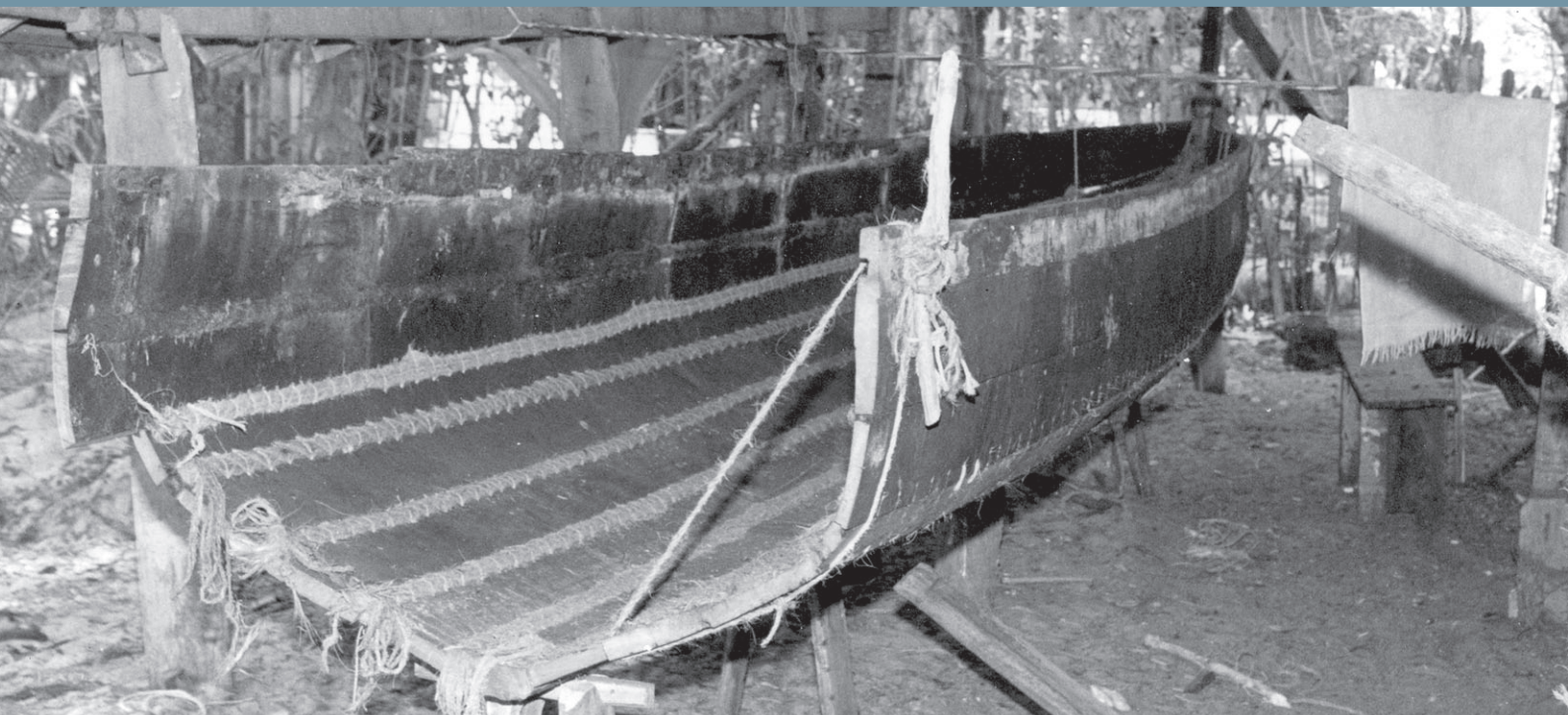
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Mini trawl operation started in Kerala during 1987, is another post motorisation innovation like the ring seine by the artisanal fishers. Mini trawl net is a seasonal gear mainly operated by the dugout boats as well as the plankbuilt. They are nylon nets with two otter boards attached to them. *Mini vala*, *Boardum vala*, *Valikkana vala* and *Pothen vala* are some of the vernacular names of the gear. Mini trawl is mainly intended to harvest the prawns available in shallow waters. Alleppey fishermen were the first to introduce this gear in the coastal sea. In order to capture the inshore demersals, fishermen cut their Thangu valloms into two halves and fitted out board engines having a capacity of 8 - 9.5H.P. This type of new motorized crafts were called Muri valloms. At present these crafts use OB engine upto 20 H.P for propulsion. The nets used in this craft have a minimum code end mesh size of 20mm. Depth of operation is within the range of 8-20 metres. Man power employed in each unit is 2-4 and the duration of each haul is 1.5 hours. Fishermen make three or four hauls in each trip. Mini trawl operation is mainly concentrated along the Alleppey coast followed by Trichur, Malappuram, Calicut and Cannanore districts. Important resources captured by this gear are penaeid

prawns, flatfishes, stomatopods, croakers, crabs, carangids and silverbellies. Major operation of this gear is during October to March period. During 2002, the total income realised from the mini trawl landings, was nearly Rs.30 crores.

Trend in total landings and effort

During 1987-2002, annual mini trawl landings ranged between 1,500 and 18,600 tonnes. The minimum landing was in 1987, when this gear was introduced for the first time in Kerala and the peak landings of 18,600 tonnes was during 1997. This accounted for nearly 7% of the total landings by the motorized units in the state. The unit operation varied from 1,800 between the years 1987 and 2002, with a peak of 256,000 units operations in 1997. As per the census of the artisanal marine fishing fleet of Kerala by SIFFS, Trivandrum, the active and non-selective mini trawls showed an increasing growth trend from 1648 in 1998 to 4531 in 2000. Catch per unit effort varied from 50kg in 1991 to 208kg in 1988. Even though vast fluctuation was noticed during the first 5 years, catch per unit effort was more or less steady during the remaining period. During 1998- 2002, catch per hour varied between 10kg and 27kg.

Average annual landings for the period 1987-1992 was 5,800 tonnes. During 1993-1997 the average landings almost doubled and during 1998-2002, the catch was more or less same with an average of 13,900 tonnes. Even though this gear was intended to catch demersal resources, incidental catch of pelagic fishes were also reported and in 2002, the pelagic resources contributed 10% of the total mini trawl landings. On an average, 34% of the total landings were prawns, 31% soles, 16% stomatopods. Croakers contribution was 3% Crabs constituted 2% of the total landings. Carangids and silver bellies contributed 1% each.

Trend in component group landings

Among the prawns *Metapenaeus affinis*, *M.dobsoni*, *Penaeus indicus* and *Parapenaeopsis stylifera* were the dominant species. Main variety of fishes were *Cynoglossus* spp., *Johnius* spp. and *johnieops* spp. Crabs like *Portunus talmita*, *P.pelagicus*, *P.sanguinolentus* and *Charybdis* spp. also occurred in the catch. Oil sardine, mackerel, whitebait, seerfishes, cat fishes, ribbon fishes, lizard fishes, elasmobranchs, white fishes, carangids, cephalopods and perches were rarely observed among the catches. Maximum prawn landings were recorded during 2001 contributing nearly 14% to the state's annual penaeid prawn landings. Nearly one third of the sole landings in the state during 2002 was accounted by this gear. Stomatopods touched the maximum of 23% during 1997. Crabs contribution to the total crab landings touched 14% during 2002 and croakers contributed significantly during 1997 with 6% of the total croakers landed in the state.

Seasonal trends

About 65% of the annual landing is accounted by the landings during January-March and October-December periods. Second quarter (April-June) ranks the next with 18% of the landings and the lean season was the third quarter (July-September). During the first quar-

ter CPUE varied between 48kg and 98kg, whereas the catch per hour in the same period was in the range 14 to 26kg. The third quarter of 2001, witnessed highest CPUE of 237 kg per unit and catch per hour for the same period was 71kg. During the fourth quarter CPUE was in the range 67-87kg. Catch per hour during the same season varied between 14kg and 27kg.

During the last five years, on an average the maximum contribution of prawns (30%) was during third quarter, 28% was during first and the remaining 19% was during fourth quarter. In the case of soles, the maximum contribution of 55% was during fourth quarter followed by first quarter (23%). The maximum landing of stomatopods, (55%) was during first quarter, followed by fourth quarter (27%) and second quarter (16%) About 36% of the croakers were landed during first quarter, 25% in the third quarter, 21% in the fourth quarter and 18% in the second quarter. Major portion (63%) of the crab landings took place during the first quarter.

The low investment of the mini trawls at the initial stage has attracted more fishermen. They could earn more for their livelihood with less investment. Prawns which come to the nearby shore for breeding, are caught by this gear. Similarly the juveniles of soles, croakers, crabs and stomatopods were also caught in large quantity. The smaller mesh size gear catches juveniles more efficiently. It is alleged that mini trawl operation is harmful to the flora and fauna of the coastal shallow waters and is considered as one of the most destructive gears in the artisanal sector. Appropriate management measures need to be taken to regulate this fishery for ensuring sustainability and better livelihood for the artisanal sector.

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