

Brief Communications

Trawl Fisheries in Andhra Pradesh: Facts and fishers insight

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Along Andhra Pradesh coast, only indigenous gear operating country crafts were in vogue till the turn of 1960 and since 1964, with the advent of the Indo-Norwegian project, fishing by small mechanized fishing crafts started. Initially, Pablo type (9.14 m length; 2.14 m beam; and 40-45 HP engine) were present and within three years, two other types, namely "Royya" (9.75 -10.0 m length; 2.9 m beam; and 45-60 HP engine) and "Sorrah" (11.4 m length; 3.2 m beam; and 60-80 HP engine) with modifications in structure and engine capacity were introduced. Until 1987, these were mainly meant for a single day or for 2-3 days cruise for shrimp fishing in the coastal waters. Voyage or Night fishing trips that started in 1980 was for two days duration each and restricted to four months (October-January), which continued till 1984. The year 1987 saw the introduction of "Sona" boats along the Andhra coast which lead to the start of voyage fishing lasting up to 10 days, aimed at saving fuel cost as compared to single day fishing. During the period from 1987 to 1990, voyage fishing was conducted in October-March and single day fishing in other months. From 1990 onwards, voyage fishing was extended to 9 months except in April, May and June and gradually by 1995, it was conducted throughout the year (Maheswarudu *et al.*, 2015; Rajkumar *et al.*, 2005). Mini trawlers made of wood, with overall length of 16 m, breadth 5.08 m, and draught 2.15 m, and fitted with 145 hp engines were introduced around year 2000. They did not have freezing facility and carried ice in the fish hold to store the fish catch. They stayed at sea for 10-15 days and operated two identical shrimp trawl nets simultaneously from the outriggers on both sides of the boat. A good quantity of fish and cephalopods were thus caught, along with shrimps. These operations were generally between Pentakota in the south of Visakhapatnam and Sunderbans in the north including the vast area of the Sandheads generally in the depth range of 40-80 m

(Chennubhotla *et al.*, 1999). By 2004, there were about 300 small trawlers, 250 sona boats and 60 large trawlers, operating off the coastal waters of Andhra Pradesh. By 2005, the number of mechanized fishing crafts had gone upto 2,541 of which 1802 were trawlers. In 2010, among the 3167 mechanized crafts present trawlers constituted 42% (1341). In 2018, there were around 1800 trawlers which was proposed to be reduced to 1,300 units based on an analysis of the marine fisheries trends in the state (Muktha *et al.*, 2018).

In Andhra Pradesh, trawl nets are of three types based on the target groups—fish, shrimp or cephalopods. Shrimp trawls have undergone several changes evolving into different versions with regard to the number of panels/seams from two to six. Likewise, the vertical opening and the length of the net and length of head rope and tow had seen a lot of changes and increments. While size of the net as a whole kept increasing, the mesh size at the wings and fore parts too increased to help reduce the drag but the mesh size at cod end kept being decreased. Two seam fish trawls, with head rope of 20 to 81 m are widely used for exploitation of finfish in Andhra Pradesh. The cod end mesh size of all the trawls was and still is way below the size stipulated in the Andhra Pradesh Marine Fishing Regulation Act 1995 (Rajeswari *et al.*, 2012).

Trawls are contributing 40 - 50% of the marine landings of Andhra Pradesh over the last couple of decades. During 1997–2003, demersal resources were the major component (43%) of the catch in *sona* boats and followed by pelagic, crustacean and molluscan resources. Although, the quantum of catch in *sona* boats were higher compared to small trawlers, the catch composition of both were similar (Rajkumar *et al.*, 2005). Since 1999, after the introduction of 45 days fishing ban during the months of April and

May, total trawl landings showed an upswing during June - August. However, this was accompanied by a fall in CPUE indicating an intensification of fishing effort. During 2012 - 2016, the total trawl landings decreased from a peak of more than 1.4 lakh tonnes in 2012 to 0.78 lakh tonnes in 2016. Catch rate (kg/h) during the same period ranged from 34.1 (2014) to 19.6 (2016). In 2017, the landing was 0.93 lakh tonnes, contributing 47% to the overall landings and a catch rate of 22.06 kg/h. In 2018, trawler contributed 44% with an annual landing of 0.84 lakh tonnes with a catch rate of 23.11 kg/h. The major pelagic resource caught in trawls over the last decade was ribbonfish and Indian mackerel while demersal resources included threadfin breams, sciaenids, lizardfishes, goatfishes and silverbellies. Crustaceans (penaeid prawns and crabs) and cephalopods (squids and cuttlefishes) were landed and in most of the years, penaeid prawns was the highest contributor in the trawl landings.

A Stakeholder Perception documentation workshop held at Visakhapatnam Regional Centre of ICAR-CMFRI, on 14th and 15th November 2017 was attended by fishery scientists and representatives of Fishery Survey of India (FSI), Marine Products Export Development Authority (MPEDA), various fisheries related associations and other stakeholders. A questionnaire was developed during this documentation workshop and later multiple stakeholder consultations were organized at Visakhapatnam (17th May, 2018), Machilipatnam (18th May, 2018) and Nizampatnam (19th May, 2018) based on this questionnaire developed. At Visakhapatnam, Nizampatnam and Machilipatnam the main concern of the trawler based fishers was the delay in granting subsidy on fuel. The fishers were of the opinion that subsidy should be incorporated in the payment system right at the time of fueling or directly paid to their bank accounts. Also, lack of proper financial assistance by the banks was an issue of great concern. Surety against the loan to be given was a major obstacle for most small scale fishers. High speed engine installed in vessels were a matter of grave concern, and according to them, need to be banned along the entire coastline. Another issue expressed was the low responsiveness and the enormous time taken to attend to the distress calls of the fishers by the coast guard. Fishers were willing to go for diversification, particularly from trawling to deep-sea tuna long lining, with a positive response for capacity building and training. The fishers were of the opinion that re-installing engine from an old vessel to a newly fabricated vessel should be not allowed and expressed willingness to use square mesh at cod end of trawls. They agreed that with use of small cod end meshes in trawls, the quality of

the catch in cod end is deteriorating to a great extent. At Nizampatnam and Machilipatnam, fishers expressed urgent necessity to increase the jetty length for accommodating all the crafts. According to the fishers, reduced depth of canal at landing centres is hindering vessels at Nizampatnam and Machilipatnam and they are forced to land and berth elsewhere. Power supply and cold storage are non-existent at both the landing centres. Ice blocks are purchased at high prices from ice plants or ice vendors located far from the harbour. Accessibility by road and availability of water was also an issue at Machilipatnam. Young fishers at Nizampatnam, were educated and tech-savvy and wanted training in vessel navigation. Subsequently, another stakeholder consultation organised at Visakhapatnam on 21st May, 2019 was attended by representatives from trawler associations of Visakhapatnam, Pudumadaka and Bhemunipatnam. Fishermen strongly favoured trawl ban in two spells, provided these periods are uniform throughout the coast and the time between the two ban periods are spaced adequately. Fishermen wanted crop holiday (trawl ban) subsidy to be increased from ₹ 4000 to ₹ 9000. The fishermen in the motorized sector wanted the ban to be in place for traditional fishers also as they felt that, the traditional fishers catch substantial quantities of spawners and juveniles of high value fishes during the ban period. They opined that strict monitoring of trawl ban is lacking and also urged for creating a safe zone to retreat during natural calamities like cyclones. All fishers were unanimous in wanting defined territorial demarcations for fishing by each sector. With higher returns from cultured shrimps than wild caught shrimps, the fishermen wanted training in mariculture. Improving the facilities and hygiene standards of the fishing harbor for maintaining optimum fish quality and better price realization, advertisement and promotion of marine fisheries, in tune with poultry and dairy sectors were demanded. While, many fishers at Nizampatnam and Krishnapatnam felt the need for landing by-catch to make profit, fishermen at Visakhapatnam strongly condemned it and were willing to organise a meeting involving representatives of all fisher associations in the state to come to an agreement on not landing by-catch.

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