Trawl fishers

Ganging up

The experience of trawler fishermen of Chennai, India shows how user groups find it difficult to manage their fisheries

Traditionally, the fishermen from Chennai and Chengulput areas of Tamil Nadu, India used *madavalai* (traditional dip-net made of cotton), *thurivalai* (cotton drag-net), *edavalai* (nylon dip-net) and *periyavalai* (cotton shore seine) to fish both pelagic and demersal species. These fishing nets required more investment and their operations needed more than one *kattumaram* (catamaran) and more labour. Thus, each fishing hamlet had three or four nets of each type, which gave employment for all the fishermen of the village. All the villagers were involved in groups in fishing, living in harmony with neighbouring villagers. In earlier days, there was no individual fishing, except hook-and-line fishing, which was performed by one or two persons jointly in a single catamaran. Fish aggregating devices (FADs) were also very common in those days.

Since all the fishing operations required groups, each fisherman felt responsible for managing the fishery resources and there was no competition among fishermen. The benefit was shared equally among the fishermen who felt that the resource in the sea is for the common good. Also, each village observed a territorial limit for fishing operations. There was no overexploitation and no one poached the other's resources, thereby giving every hamlet an equal opportunity to benefit from the resources.

In the early 1950s, nylon gill-nets of different mesh sizes were introduced. These weighed little, cost less and could be easily handled by two or three persons. Individual fishermen started to buy these nets and employed two or three persons on a share basis. This paved the way for the erosion of group or community fishing, and encouraged individual fishing, leading to competition and fishing during the night, resulting in the continuous disturbance of the sea.

In the 1960s, the government of Tamil Nadu introduced mechanized gill-nets with the help of Norway. The first boat introduced was a 26-ft bottom gill-netter. Such boats were given to fishermen's societies and community leaders. In 1965-66, 30-ft gill-netters and trawling boats were introduced. Simultaneously, the export markets were opened with the collaboration of Japan and the US. During this period, fishing operations with mechanized boats were carried out in the 40-km stretch between Ennore and Thiruvanmiyur. The maximum fuel they carried per day was 50 litres. The fishing was carried out during daytime, from 6 am to 2 pm. During this time, they did two hauls and got good catches. In 1969-70, 32-ft boats were introduced. In 1972-73, the area of operation was extended to Sriharikotta in the north and Mahabalipuram in the south, a stretch of about 120 km.

During this period, the shrimp catch was very good. The fishing was done both by gill-netters and trawl boats. Since the shrimp were caught in the shallow waters, all the boats were concentrated in the inshore areas where the traditional fishermen fished, resulting in a continuous ploughing of the fishing ground, which caused the resources to start depleting very fast.

Heavy losses

Also, the movement of boats in the inshore areas made the traditional fishing more vulnerable. Fishing operations by mechanized boats damaged the traditional craft and gear, and caused heavy losses to the traditional sectors in terms of resource and properties. This led to conflicts between mechanized and

traditional fishermen in 1977, when the catamaram fishermen started seizing boats operating in the shallow waters.

The government interfered and introduced some regulations on the mechanized sector, and also a territorial boundary between traditional and mechanized fishermen, which was patrolled by the Fisheries Department officials. This conflict led to the creation of the Federation of *Panchayat* Councils (in Tamil, *Aikkiya Panchayat Sabai*) in Royapuram.

Around 90 per cent of the boatowners lived in Royapuram and neighbouring villages, where they were attacked by the catamaran fishermen. To get support from the traditional fishermen, the boatowners conducted a meeting of about 10 villages in the Royapuram area and formed an *Aikkiya Panchayat*.

At the *panchayat* meeting, the boatowners promised to develop their village economically. They collected 25 paise per basket of fish sold and handed over the money to the *Aikkiya Panchayat*.

The money was spent for village needs. In this way, with the help of the *Aikkiya Panchayat*, the boatowners got immunity from attack by the catamaran fishermen. Fishing disputes between boatowners and catamaran fishermen were now cleared through the *panchayat*.

Until 1977, the maximum fuel carried on board a boat was 150 litres per trip. In the 1980s, the shrimp catch began declining and some of the trawlers started to fish finfish and squid in the deep sea, at about 40-42 fathoms, where some ridges (patches of rocks) are present. They caught about 100 baskets of fish per trip (around 2,500 kg). The fishing operation was between 3 am and 2 pm daily. By 1985-87, the fertile ground had become deserted by continuous trawling. Daily fishing became unprofitable and fishermen began to fish continuously throughout the night and the next day, and slowly long trips (stay fishing) became common. The boats now began to carry 200 litres of fuel per trip, along with some ice.

In 1987, the mechanized fishermen started to feel the depletion of fish resources in and around Chennai due to the continuous ploughing of the fishing grounds and changes in the bottom ecosystem. Most of the fertile grounds became unfertile. In order to stay out at sea longer, the fishermen built onboard fish-holds to store the fish with ice.

Two-day trips

They also carried one 140-kg block of ice with them, as well as extra fuel, stored in plastic containers. With these facilities, they started to go for two-three day trips between Kalpakkam and the northern part of Shriharikotta.

With this system, the fishermen caught more fish, saved fuel and spent more time fishing. At the same time, boat maintenance costs increased due to the continuous running of the engine. The fishermen also found that the Andhra Pradesh coast has greater potential, which can be easily exploited with better facilities like larger boats, bigger fish-holds and more fuel. They thus began to desire the big boats available in Mangalore in Karnataka. Some of the fishermen brought these 40-ft boats from there in 1987. These could carry 1000 litres of fuel and 10 to 15 blocks of ice to stay at sea for three or four days, fishing along the Nellore coast of Andhra. The catch increased per unit effort. Soon, every fisherman in Chennai wanted to follow this method. The fishermen started modifying their 32-ft boats into 40-ft boats with engine capacity of 120 hp.

In 1990, the Central government pumped money into the sector by giving 20 per cent subsidy for new boats through the National Bank for Agriculture and Rural Development (NABARD). This led to the sudden increase of 40-42-ft trawlers in a short time. The boats had fuel tanks with capacities of about 1,000-1,500 litres, and huge insulated fish-holds under the deck to hold about 2.5-3 tonnes of fish. Extra fuel was carried in plastic containers and about 3 tonnes of ice in the fish-holds. One important innovation was the fibre coating to the outer sides of the boats, which provided more buoyancy and added confidence to the fishermen. With these facilities, they started to go farther to northern Nellore and crossed Prakasam District in Andhra Pradesh.

The 1980s was the period when the trawl fishery progressed remarkably and attained peak production of 23,953 tonnes in 1989. The threefold rise in the annual fish production observed in 1985-89, compared to the previous five-year period, was due to the start of long-trip shrimp trawling operations off the Sriharikotta-Nellore coast, which resulted in greater catches and catch rates than the short-trip shrimp trawlers operating off the Chennai and adjacent coasts.

In the beginning, the Andhra fishermen did not give any problem to the Chennai boats. But the Chennai boats violated the local fishery regulation by operating their trawlers in the shallow waters and damaging the craft and gear of the traditional fishermen, who were even assaulted at sea. This led the local catamaran fishermen to retaliate. They started to catch and detain the Chennai boats, offloaded their catches and collected fines. This resulted in regular law-and-order problems in the sea.

The Andhra fishermen claimed that the Tamil Nadu fishermen had no right to fish in their waters, particularly in the notified traditional fishermen's areas. But the Chennai fishermen claimed they were fishing in the deep sea beyond the traditional fishing areas and were not damaging the craft and gear.

The Chennai fishermen also argued that, as citizens of India, they are free to go anywhere to do business, and preventing them from fishing in Andhra waters was against fundamental rights guaranteed in the Indian Constitution.

From 1993, the Tamil Nadu government started a solatium fund by collecting money from the Chennai boatowners. Each boatowner would pay Rs500 per year to the government, who would give a compensation amount to any victims of clashes between the Chennai and Andhra fishermen. After a few years, the boatowners found it difficult to pay the amount, and so they requested the government to reduce it, which was done. They now pay Rs300 per year. This amount is meant only for those who are either injured or have lost their lives in clashes, and not for the penalties sought by Andhra fishermen who detain the Chennai boats.

As the conflicts usually occur in Nellore and Prakasam districts, the Chennai fishermen started to avoid these areas, even though the grounds are very fertile. They began to go further north and now reach up to the Kakinada coast, with basic equipment like echo sounders, compasses and global positioning systems (GPS).

Not seaworthy

Most of the boats are not certified for seaworthiness. Carrying about 2,000-3,000 litres of fuel and 40-45 blocks

of ice (weighing around 6,300 kg), they spend about 10-15 days at sea.

In the 1960s, only Pablo-type mechanized boats of 26 ft in length were introduced for bottom gill-nets, and in 1965, the preferred size became 30 ft. After that, fishermen started giving importance to trawlers rather than gill-netters because of good shrimp catches and good returns from the export markets. Trawlers became dominant between 1965 and 1990. In 1980, the number of gill-net boats had declined to about 10 to 15, compared with 500 trawlers. Before 1990, the gill-nets were operated between Mahabalipuram and Sriharikotta in the 20-50 m depth range throughout the year except during the northeast monsoon season. The main species caught were shark, ray, seer, carangid and tuna.

In 1990, seeing the improvement in trawlers with respect to size, catch and storage, the gill-net fishermen also started to convert their small boats into big size (42-ft or 12-m) boats and went for long-trip fishing in distant places off the Andhra coast and earned good profits. At the same time, the catch of the 42-ft trawlers started declining. Since gill-net fishing is not as risky as trawling and also giving good profit, the attention of the trawler fishermen was diverted to gill-net fishing. So in 1997-98, some of the trawler owners converted their big trawling boats into gill-net boats for better profits. All the big gill-net boats have insulated fish-holds as in trawlers and large fuel tanks to store 750–1,000 litres of fuel. They carry 30 blocks (4,200 kg) of ice, and use long gill-nets of about 150–300 fathoms length (450–900 m), weighing about 1–1.5 tonnes.

After the conversion to a larger size, the gill-net boats go up to Nizampatinam to catch shark, ray, seer, carangid, tuna and flying fish. They go into deeper waters of more than 100 fathoms (300 m), about 60-75 km from the shore. At present, more than 70 gill-netters are operating from the Chennai fishing harbour and nearly 20 trawlers are being converted to gill-net boats. Alongside the gill-nets are longlines with 200 hooks for shark, fished in the deeper rocky areas locally called *maadai*, where the trawlers also operate for fin fish and squid. Since the trawler fishermen are in the majority, they banned longline fishing from gill-net boats.

At present, the trawlers operating from Chennai comprise four different overall length groups, 9.5-10 m, 11 m, 12 m and 13-14 m (the conventional 32-ft, 36-ft, 40-ft and 45-ft), with the horsepower varying between 90 and 120. The vessels of overall length 9.5-10 m and 11 m exclusively operate fish trawls northeast of Chennai in slightly deep waters of 30-40m adjacent to the rocky patches, whereas the 12-m and a few 11-m vessels conduct daily shrimp trawling trips in the coastal waters off Chennai at depths of 15-30 m. The trawlers with length range of 13-14 m and 120 hp engines are engaged in long-trip fish and shrimp trawling off Shriharikotta and Kakinada at depths of 15-30 m for durations of 15 days.

When mechanized boats were first introduced in Chennai, there was no union for mechanized boatowners. Later, they formed two associations and one co-operative society. Both long-trip gill-netters and trawler boatowners are members of the Chennai-Chengai Boatowners Association. The *madai* boatowners have formed an association called the Singaravellar Boatowners Association.

The Chennai Boatowners Association soon became the trumpet of the ruling political party. That is one reason why fishing regulations are not implemented properly along the Chennai coast. The other reason is that the Chennai fishing harbour is situated in the Royapuram legislative constituency, where the majority are fishermen working in the mechanized sector. Most of the Association rules favour its leaders and the other large boatowners.

That is why most boatowners are not interested in renewing their registration, paying berth charges or solatium funds and taking out insurance on their boats.

Fishing holidays

To replenish fishery resources, all coastal States in India have been implementing fishing holidays of 45 days every year for two years now. But artisanal fishermen

fish during this period with the knowledge of fisheries officials, who know that they are not doing any destructive fishing like trawling. In Tamil Nadu, the fishing holiday is declared every year from 1 May to 15 June. Though the boatowners realize it is good for the replenishment of resources, they are ready to go fishing if there is no legal action against violators. Evidently, the boatowners are not too bothered about managing the resources. They are now claiming compensation from the government for the holiday period.

In an effort at self-management, the Boatowners Association has banned midwater trawling and molluscan conch shell (*chank*) fishing. It banned longline fishing by gill-net boats, since they were operating in the same rocky grounds as bottom trawling. It banned outsiders other than Chennai, Chengai and Kanchipuram fishermen. It banned the addition of new boats. However, the Association has not banned shrimp trawling which is exclusively operated very near the coast, just opposite the river mouth, using very small-mesh nets (*semakkera* net) and damaging the fishing ground more than any other nets.

This article is by B. Subramanian (bsmanian9@rediffmail.com), a Fisheries and Environmental Consultant based in Chennai, India