

Voluntary Responsible Fisheries Management: Cases from Tamil Nadu

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Introduction

As in many tropical developing countries, the fisheries management in India is often intertwined between formal and informal agreements (traditional systems), which are not easily observed (Pidoet *al.*, 1996). Most of these local agreements are semi-official, traditional, and sometimes even oral among different players involved in the activity. Even though all the fishing activities in Tamil Nadu are formally governed by the Tamil Nadu Marine Fisheries Regulation Act, 1983, the local agreements, rather than the Act and other government directives, seem to determine the management of the fisheries. The local agreements or heterogeneous local management systems or voluntary responsible fisheries management are exclusive for a village and do not apply for the nearby villages even though same fishing grounds might be shared. However the Department of fisheries, the District Collector and the Panchayat authorize these local agreements before they come in to order. These informal management systems are highly dynamic providing solutions for newly emerging problems.

The local agreements or heterogeneous local management systems or voluntary responsible fisheries management which is followed in Tamil Nadu coast were: Vembar (time restriction, daily and yearly), Tharuvaikulam - (no trawling only passive gears), Veerapandianpatnam (mechanised boats do not operate for 5-6 months and time restriction, daily and yearly and spatial separation), Tuticorin (time restriction, daily and yearly), Palk Bay and Gulf of Mannar (GoM) region of Ramanathapuram District (three-four day rule) and Gulf of Mannar (GoM) region of Ramanathapuram District (self-regulation in seaweed collection).

The noticed local agreements strive to provide solutions for the three characteristic problems arising in areas where mechanised and traditional fishing vessels exploit the same resource:

1. Mechanised boats often damage the fishing gear of traditional fishermen, causing financial loss to them;
2. Mechanised boats pose danger to the safety of the traditional fishermen: due to collisions between mechanised boats and country boats, traditional fishermen get injured; and
3. The expanded reach and indiscriminating nature of trawling downgrade the marine resources, lowering catch and income of the traditional fishermen and endangering sustainability of the resource. (Haastrecht & Schaap, 2003)

i) Vembar, Tuticorin district of Tamil Nadu

Management intervention: Time restriction, daily and yearly

The mechanised boats are employed for **only four to six consecutive months per year**. The abundance of target fish species, the trawling ban in April - May, and the beginning of the rough season determine the length of the fishing season. Although the start of the peak season for fishing starts in April, the boats are restricted by the trawling ban, and they can only start fishing in June. The rough season generally begins in November. The fishing season thus last from June to September or November. During the remaining months, there will not be enough fish to make the fishing operation profitable, while during the rough season it is too dangerous at sea, and there is a higher risk of occurrence of cyclones. Mechanised boats are operated six days a week, from Monday to Saturday. As the majority of the fishermen in Tuticorin district are Christians, Sundays are without exception, free days. The time that the boats stay at sea, is dependent on the season, targeted species, and the visited fishing grounds. The following timings followed were:

- During June the boats leave the shore at **1 a.m., and return at 5 p.m.**;
- From August onwards they will leave at **5:30 a.m. and return at 12 p.m.**

Night fishing is thus common practice. The mechanised boats operating off Vembar exclusively apply bottom trawling. There are two types of bottom trawl nets: one specifically for prawn fishing, used from June to August, with small mesh-size at the cod-end, and one used for capture of demersal fish, which has larger meshes. The boats from Vembar mainly exploit the prawn fishing grounds that are close to a place called Erwadi, located in Ramanathapuram district. Boats from Tuticorin and other areas are increasingly coming to these same fishing grounds. (Haastrecht & Schaap, 2003)

The existing local agreements in Vembar only seem to concern, to some extent, the time schedule for mechanised boats: the time schedule related to seasons was said to be a result of a local agreement. If any, agreements present are not official written agreements, but come as oral agreements between the mechanised boat and traditional fishermen. Yet these agreements have to be approved by the boatowner and fishermen association in meetings organised by the village panchayat. Due to these oral agreements, there are no long lasting conflicts between the mechanised and traditional fishermen. When a conflict, due to damages of traditional fishing gear and the like, arises, it is settled immediately amongst the involved people.

The local agreements do not extend to neighbouring fishing villages, although the same fishing grounds are largely shared. When there are conflicts with fishermen from different villages, the panchayats will organise peace meetings and in this way try to settle the dispute. Most conflicts will occur between mechanised boat fishermen and the traditional fishermen. The conflicts within the mechanised sector, including mechanised boat fishermen from other villages, are negligible. (Haastrecht & Schaap, 2003)

ii) Tharuvaikulam, Tuticorin district of Tamil Nadu

Management intervention: no trawling only passive gears

As in Vembar, mechanised boats are not employed all year round. During the rough season, on rainy days and during the ban period, the boats will not be operated for the same reasons mentioned in the Vembar section. The traditional fishermen on the other hand, will operate their vessels year round. The boats are operated six days a week, Sunday is a rest day. **The fishermen are not bound to a time schedule:** departure and return of the boats depend on the targeted species and the type of nets used. For instance, nets for crab capturing are set in the afternoon and collected the next day. When finfishes are targeted, the boats will leave at 6 or 7 p.m. and return in the early morning, around 6 a.m. Frequently, the boats stay out for multiple days, usually remaining at sea for three nights. Also here, night fishing is common practice. The mechanised boats in Tharuvaikulam do not use the trawling method and operate only gill nets. The fishing grounds are currently some 30 nautical miles away from Tharuvaikulam. Fishing is carried out in different areas, which are frequently shifted depending upon the catch. Boats from Tuticorin go to the same areas. (Haastrecht & Schaap, 2003)

In contrast to the other localities, **the mechanised boats from Tharuvaikulam do not employ the trawling method. A local agreement between the mechanised and traditional sector restricts the mechanised boats to the use of gillnets. Bottom trawling is not allowed under any circumstance.** The decision on the banning of the trawling technique was based on the fact that trawling affects the resource in a negative way, in contrast to passive gears, like gill nets. All respondents agreed that trawling causes damage to the marine ecosystem. Moreover, as trawling also causes damage to the gear and the crafts of the traditional fishermen, the ban on trawling is also a method to avoid conflicts between the two user groups. The agreement on prohibiting trawler fishing was apparently an oral agreement. The fishermen from other locations (Tuticorin mainly) are not allowed to use trawling off Tharuvaikulam. When fishermen from Tuticorin do operate their trawling vessels near Tharuvaikulam, it is said that officials from the Fisheries Department arrange their removal and send them back to Tuticorin. Due to the fact that mechanised boats only use gillnets, there are hardly any problems and conflicts on the local level among the traditional and mechanised boat fishermen from Tharuvaikulam, even as they exploit at the same fishing grounds. If any, problems that inevitably would appear are settled with help from the village panchayat, or an Assistant Director of the Fisheries Department. However, most problems emerge between mechanised boat fishermen from Tharuvaikulam and Tuticorin. The trawlers from Tuticorin exploit the same fishing grounds and cause damage to the gillnets. (Haastrecht & Schaap, 2003)

iii) Veerapandianpatnam Tuticorin district of Tamil Nadu

Management intervention: Mechanised boats do not operate for 5-6 months, time restriction, daily and yearly and spatial separation

As in Vembar and Tharuvaikulam, **the mechanised boats are employed only 5-6 consecutive months a year**. They are operated from June to October - November and berthed for the rest of the year in Tuticorin fishing harbour. The traditional boats are operated round the year. Hence most of the crewmembers (and some boat owners too) employed on mechanised boats will work on traditional fishing crafts in the remaining months. Typically, the mechanised boats berthed in Tuticorin harbour will not be operated during these months. In general, fishing operations are carried out six days a week (Monday to Saturday). The boats have a regular time schedule: **all boats leave the shore at 6 a.m. and return between 9- 9.30 p.m.** Hence, they do not undertake night-fishing operations. The mechanised boats use bottom-trawl nets, sometimes alternated with hook and line. Some fishermen only use one type, both for fishing on prawns and finfishes, (with mesh sizes ranging from 30 mm between knots at the cod end, to 130 mm between knots at the upper end). Others use a different net for fishing on demersal fishes, these nets have bigger mesh sizes than the previous net. The fishing grounds exploited by fishermen from Veerapandianpattinam are also used by mechanised boats from Tuticorin and other areas. Compared to ten years ago, the fishing grounds are located further from the shore. The fishing grounds are shifted frequently, depending on the catch. (Haastrecht&Schaap, 2003)

In Veerapandianpatnam mechanised boats do not operate for 5-6 months in a year as dictated by the local agreements. (November-June) Although in Tuticorin harbour area all the local agreements that were existent came to a standstill after September 2002, following an accident, which involved a mechanised vessel colliding with a vallam from Punnakkayalvillage near Tuticorin harbour. This later broke in to a serious problem as three traditional fishermen died in this incident and all the peace talks failed. Since then the Act has been strictly implemented as was demanded by the traditional fishermen. However the fishermen are trying to formulate new local agreements and requesting the fisheries department to acknowledge it as the trawler fishermen find it unprofitable to go for fishing as per the timings mentioned by the act which are implemented now. Paying heed to this request the Department of Fisheries has relaxed the restrictions on timings from 9.00 pm to 11.00 pm for some time. Though the diverse local agreements constrain government intentions to enforce a uniform law, they nevertheless are very effective when it comes for enforcement and at the same time serve as effective tools for conflict management. Given such agreements, which are in place, which vary from village to village, the key is to identify the most effective way of sustaining the resources with minimum social cost inflicted on the people belonging to the community. (Haastrecht&Schaap, 2003).

This is the only village in the district where a local agreement between the two user groups restricts the employment of mechanised boats to 5-6 months a year. When fishermen do want to go for fishing with a mechanised boat during the months between November and June, they have to ask permission from the traditional fishermen. Moreover, still they are only allowed to operate their boats from Tuticorin harbour since the boats have

to be berthed there between November and June. This agreement seems to be in place since 15 or 20 years ago. One fishermen framed that this time restriction on the number of months allowed for trawling, was a court order to protect the traditional fishermen. It is not clear whether this agreement really was issued in court, or agreed on by the village panchayat. Most mechanised boat fishermen work in the traditional sector for at least six months per year. **Mechanised boats are not allowed to fish close to the shore, and are restricted to areas where the bottom is at least over 5.75 meter below the water surface. In their turn, the traditional fishermen have to stay close to the shore, and are not allowed to fish in areas where mechanised boats can operate.** In general local agreements are arranged between the cooperative fishermen society (for traditional fishermen) and the mechanised boat fishermen in presence of the village panchayat. When possible, problems between traditional and mechanised boat fishermen are directly solved among themselves. However, conflicts involving fishermen from Veerapandianpattinam and other fishing villages in the district are not solved that straightforwardly. (Haastrecht&Schaap, 2003).

iv) Tuticorin, Tamil Nadu

Management intervention: Time restriction, daily and yearly

In Tuticorin, the mechanised boats fishermen have their own harbour, while traditional fishermen are in general concentrated in nearby villages Thirespuram and Punnakayal. Another considerable difference with the other villages is that, with regard to the time schedule, the Act of 1983 is strictly implemented. The mechanised boats from Tuticorin operate the entire year, except during periods with very bad weather conditions. Usually this is in November; the sea will be very rough and dangerous, and most mechanised boats will not go for fishing. As is the case in the other villages, the boats will not be operated on Sundays. **The timings are strictly managed by the Act: the boats are allowed to leave the harbour at 5 a.m. and have to be back by 9 p.m.** The boats in Tuticorin only practice bottom trawling. Tuticorin trawlers mainly exploit the resource from the trawling grounds off Punnakayal and Manapad to the south and off Erwadi to the north of Tuticorin (Rajmani&Manickjara 1995). These fishing grounds are shared with many other fishers from villages in Tuticorin district.

The fishing customs of mechanised boat fishermen in Tuticorin are now to a great extent determined by the rules in the Act. However, until September 2002 the fishing customs were determined by an extensive set of local agreements. Most of these agreements were designated to provide solutions for problems between the traditional and mechanised boat fishermen. These agreements provided rules on the number of months the mechanised boats were allowed to fish, rules on timings, spatial separation of mechanised and traditional boats, rules for closed seasons and rules on conflict solving. The local agreements in power in and near Tuticorin are thus officially written documents. In order to arrange the agreements, the Assistant Director or Joint Director of the Fisheries Department organise meetings with the leaders and other important persons from the boatowner association and the cooperative fishermen society. Usually also a police officer or the District Collector will be present. When the agreements are accepted, all groups have to sign the written agreements. According to the mechanised boat fishermen from Tuticorin, problems between them and mechanised boat fishermen from other villages do not exist. Most conflicts arise between the mechanised boat fishermen and the traditional fishermen. Especially conflicts

between fishers from Tuticorin and Punnakayal have a long history. Serious conflicts between traditional and mechanised boat people are settled by the Assistant Director and the police. Small problems between the traditional and mechanised boat fishermen are settled among themselves or by leaders of the Boat Owner Association or Co-operative Fishermen Society. (Haastrecht&Schaap, 2003)

v) Palk Bay and Gulf of Mannar (GoM) region of Ramanathapuram District **Management intervention: Three-Four Day Rule**

In the view of the major conflicts took place between mechanized fishing vessels, specifically those using trawlers, and the small-scale fishing vessels, the three-four day rule was implemented in the Palk Bay and Gulf of Mannar (GoM) region of Ramanathapuram District from 1993, based on the decision taken at a District Collectors' meeting. It allows mechanized fishing vessels to fish for three days a week, while small-scale fishers could fish on the remaining four days. The 'three-four day rule' system was initiated as part of district administrative orders to maintain law and order in the district, is one of the important fishing regulations being implemented by district-level officers. Similar kind of rule was implemented during 1977 in the Pudukkottai and Thanjavur Districts. The decision was to implement different regulations for the northern and southern parts of the districts, and also in different seasons. The regulations for the northern part of the district, that is, Palk Bay, are strictly implemented by the District Directorate of fisheries officials, whereas in the case of the GOM, the regulations have been formulated by fishermen's organizations and boat owners' associations themselves, to avoid conflicts in the fishing grounds. This regulation is also followed by the non-mechanized fishermen, who observe specific times for setting sail and returning to shore.

vi) Gulf of Mannar (GoM) region of Ramanathapuram District **Management intervention: Self-regulation in seaweed collection**

- i. As a community initiative since 2006, in the Palk Bay region, seaweed collection (*Gelidiella acerosa*) is banned during the month of October to January, whereas in Gulf of Mannar region seaweed (*Gelidiella acerosa*) collection is banned during the month of March to June.
- ii. Similarly the seaweed (*Sargassum* spp.) is collected only during the month of July to October in a year.
- iii. In some villages collection of seaweeds is restricted to 12 days in a month, with Friday designated as no-collection day.
- iv. Another community initiative is the banning of metal scrapers for collection of seaweed. Traders have been asked not to buy seaweed collected with scrapers.

Conclusion

The local agreements or heterogeneous local management systems or voluntary responsible fisheries management is primarily instigated to the protection of traditional fishermen: if they accept an agreement with the mechanised boat fishermen, the Fisheries

Department does this as well. Besides that, local agreements can avoid conflicts between fishermen, since fishermen will be more dedicated to their own rules than to government regulations. In consideration of local conditions, there is variation in fishing customs in the different villages. For this reason regulations can differ, and that is why local agreements are accepted alongside the act. When local agreements work well, the Act behaves as basic background for local fisheries law rather than as regulating body.

Common Resource pools, like fisheries, managed by the community, which holds the right over decisions regarding the resource exploitation, is a much better option than open access, government and private ownership of the resource (Ostrom, 1999). Cases like Tharuvaikulam show the effectiveness of community-managed resources in the task of ensuring sustainability. A decentralised community management system is the need of the hour to tackle the problems that will be faced by the fishing community in the near future.
