

Fishing Patterns and Intensity in Kanniyakumari District, India



Mimeo Series

FISHING PATTERNS AND INTENSITY IN KANNLYAKUMARJ DISTRICT, INDIA

by

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Preface

This document is based on a survey that was conducted in December 1997 by the Bay of Bengal Programme (BOBP), in co-operation with the Coastal Peace and Development Committee of the Kottar Diocese Church in Kanniyakumari district, Tamil Nadu and the Tamil Nadu Department of Fisheries.

The survey was meant to provide a qualitative overview of the fishing behaviour of three different groups of fishermen from coastal villages of Kanniyakumari district, who operate kattumarams, vallams and boats.

The study may be considered complementary to a study on the infrastructure needs of Kanniyakumari coastal villages, which was also carried out in 1997.

Both studies originated from the need for additional information on fishing behaviour and village needs in the district, to be investigated through stakeholder approaches.

The BOBP is a multi-agency regional fisheries programme that operates in seven countries around the Bay of Bengal – Bangladesh, India, Indonesia, Malaysia, Maldives, Sri Lanka, Thailand. The Programme plays a catalytic and consultative role in developing coastal fisheries management in the Bay of Bengal, thereby helping improve the conditions of small-scale fisherfolk communities.

The BOBP is sponsored by the Governments of Denmark and Japan. The executing agency is the FAO (Food and Agriculture Organization of the United Nations.)

Foreword

The coastal belt of Kanniyakumari district in the southern State of Tamil Nadu is highly important from the fisheries point of view. There are 39 villages along the 68 km coastline with a population of about 135 000 fishermen of whom some 48 000 are active fishermen. The characteristic multi-species and multi-gear fishery of the region is tapped by three distinct categories of fishermen— who operate traditional *kattumarams*, *vallams* and mechanised boats. However, due to a shrinking resource size and limitations in the area available for fishing, inter-group conflicts often break out at sea and on the shore.

Kanniyakumari district has been an important activity centre of the BOBP during its management-oriented Third Phase, which began in 1995. The focus of BOBP's work in the district has been to promote and facilitate fisheries management through awareness building, strengthening of institutional capacity and technical backstopping. Central to BOBP's work has been the introduction of a participatory approach to fisheries management by involving all fisheries stakeholders. The work led to *Fishing Patterns and Intensity in Kanniyakumari District, India*, the second publication in BOBP's mimeo series.

A survey prior to this report provided a qualitative overview of the fishing behaviour of the three different groups of Kanniyakumari fishermen referred to above (those who operate *kattumarams*, *vallams* and mechanised boats). The tool of Geographical Information System (GIS) was used to map the fishing behaviour and fishing patterns of these three groups.

The report provides a qualitative indication of the spatial ranges in which different categories of small-scale fishermen operate in the territorial waters. It indicates the areas in which overlaps occur between fishermen fishing for certain species and using certain gear.

The survey and the report are important BOBP initiatives, novel in many ways. They will help coastal States and Union Territories in India to better understand the nature and character of resource conflicts and also demarcate zones for different categories of fishermen through the approach of participatory and community-based fisheries management.

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SUMMARY

BOBP has been active in Kanniyakumari district throughout the management-oriented Third Phase of the Programme. The focus has been on facilitating fisheries management in the district through awareness-building, strengthening of institutional capacity and technical assistance. Central to this approach is the involvement of all stakeholders concerned with fisheries management, such as the Kottar Diocese Church, the Department of Fisheries and representatives of country craft and mechanised boat unions, as also the fisherfolk themselves.

In consultation with the Coastal Peace and Development Committee (CPDC), it was decided that a joint meeting of all stakeholders including officials from departments other than fisheries was necessary to improve the conditions of the coastal people. A fisheries management plan had to be developed that would not only reduce conflicts among fishermen, but would also stop coastal degradation and restore fisheries resources.

BOBP conducted two surveys in 1997 at the request of the Tamil Nadu government as part of the planning for a stakeholder consultative meeting in November 1997. This report presents the findings of one of these surveys, which aims at a qualitative spatial analysis of the fishing behaviour or fishing patterns of three groups of Kanniyakumari fishermen: those who operate kattumarams, vallams and mechanised boats. It is assumed that conflicts between fishermen are often the result of an overlap in fishing areas by different groups of fishermen.

The extent of overlap so far in fishing areas between the Kanniyakumari fishermen has not been studied. The basic questions asked in this study related simply to 'who is fishing where, for what species, and with what gear?' The results of this study give a qualitative indication of the spatial ranges in which the three groups of fishermen from each village fish.

There are 75 fishermen groups in Kanniyakumari district, of whom 38 work with kattumarams, 26 with vallams, 14 with boat fishermen.

Of the 75 fishermen groups, 57 (76%) said shrimp was one of their six most important species, and 51 groups (68%) mentioned squid/cuttlefish. Other frequently mentioned species were seer fish (42 groups/56%), tuna (31 groups/41%) and grouper (28 groups/37%).

Of the 38 kattumaram groups, as many as 33 (87%) said shrimp was one of their six species, so did 19 of the 26 vallam groups (70%). Eight of the 14 boat groups (57%) mentioned squid+cuttlefish, grouper and shark as one of their six species.

Fifty eight of the 75 fishermen groups (77%) said handline was one of their six most important gears, while 55 groups (73%) mentioned trammel nets (see Table 4). Other frequently mentioned gears were longline (45 groups/60%), sardine (34 groups/45%) and anchovy net (32 groups/42%). If we consider gears by type of fishermen group, 31 of the 38 kattumaram groups (82%) mentioned both handline and trammel net, 20 of the 26 vallam groups (77%) mentioned both trammel net and longline, while nine of the 14 boat groups (64%) mentioned mostly longline.

Fifty three of the 75 fishermen groups (70%) said shrimp/trammel net was the species-gear combination used most often. Squid-cuttlefish/handline was mentioned by 36 groups (48%). Other frequent combinations are seer fish/handline (33 groups/44%) and seer fish/drift net (28%). For kattumaram and vallam fishermen, the species-gear combination chosen most often is shrimp/trammel net (30 out of 38 groups/79% and 19 out of 26 groups/73% respectively). For boat fishermen it is shark/longline (7 out of 14 groups/50%).

The two indices, crowdedness and overlap, give an indication of the probability of potential conflicts, or conflicts index, between fishermen groups in Kanniyakumari district when fishing for certain species using certain gear.

All the selected species – grouper, mackerel, rock cod, seer fish, shark, shrimp, squid+cuttlefish and tuna – show a high probability of potential conflict among the fishermen groups. A high probability for potential conflicts is also calculated for the species-gear combinations: grouper (handline and longline), rock cod (handline and longline), squid+cuttlefish (handline), seer fish (handline, longline and drift net), shark (longline), shrimp (trammel net) and tuna (handline, longline and drift net).

For most fishermen groups, catches today are far less than what they were 10 years ago. Some fishermen say they spend more time at sea compared to ten years ago, but others say they spend less time at sea. The latter do not want to waste their time at sea. During the monsoon it is hardly possible to fish in Kanniyakumari district, though catches are usually high.

1. INTRODUCTION

1.1 Background

Kanniyakumari district in Tamil Nadu is at the southernmost tip of India, the country's hands-end. The coastal zone of the district, a strip of 68-km coastline, harbours 39 fishing villages.

The fishermen of these villages have a country-wide reputation. Those from the eastern villages, in particular, are known for their travels up to Gujarat and beyond for shark fisheries. The fishery in general is characterised by its multi-species and multi-gear character – which is a common feature of India's marine fisheries.

The coastal villagers have lived in peace for many generations. Till recently, population numbers were small and enough fish was available for everyone. In recent decades, however, more and more conflicts have broken out. Possible causes are the higher village population on the one hand, and the decline in catches of fish due to increased fishing activity, on the other. No alternative income options are available. The people are thus trapped between two scenarios: insufficient earning for a living, and lack of any other source of livelihood.

Tensions between fishermen – the artisanal kattumaram fishermen and the mechanised boat fishermen, for instance – have got aggravated. A kattumaram, basically an oblong raft of tied logs, usually stays close to the shore. It may have an outboard engine, but it does not carry heavy fishing gear and cannot stay out at sea for a very long time. Mechanised boats, however, go on long journeys far out at sea. They carry large and heavy fishing gear that generates far higher yields than the gear of kattumaram fishermen.

The third group of fishermen in the district, the vallam fishermen, operate vessels that are less powerful than mechanised boats but more powerful than kattumarams. A vallam or plywood boat is larger in size than a kattumaram and carries an outboard engine, enabling fast movement toward distant shoals of fish. Incidents between kattumaram and vallam fishermen are less common than those between kattumaram and mechanized boat fishermen.

Apart from resource conflicts, fights also break out between people of the same village or between people of neighbouring villages. These reflect the disturbed emotional state of the people, also the steep increase in the consumption of alcohol during the last decade. Alcohol consumption is low only just before the monsoon in April-May – when catches and incomes are still low.

1.2 This study

The BOBP has been actively involved in Kanniyakumari district during its management-oriented Third Phase which began in 1995. The focus has been to facilitate fisheries management in the district through awareness building, strengthening of institutional capacity and technical assistance. Central to this approach is the involvement of all stakeholders concerned with fisheries management – such as the Kottar Diocese Church, the Department of Fisheries and representatives of country craft and mechanised boat unions, as well as fisherfolk themselves.

In 1996, the Kottar Diocese Church initiated a Coastal Peace and Development Committee (CPDC) following the increasing number of incidents between fishermen. The committee consists of a secretariat and six co-ordinators from six zones. This initiative aims at conflict resolution between two fighting groups by a neutral third party. The strategy has been very successful during the last two years; the villagers call the CPDC co-ordinator rather than the police after accidents occur. Apparently they put more trust in the CPDC than in the police.

Since 1996 BOBP has assisted the CPDC in its efforts to organise stakeholder consultative meetings. Five meetings were held from 1996 to 1997.

In 1997, in consultation with the CPDC, it was decided that a joint meeting of all stakeholders including officials from departments other than fisheries was necessary to improve the conditions of the coastal population. A fisheries management plan had to be developed that would not only reduce conflicts among fishermen, but would arrest coastal degradation and help rehabilitate fisheries resources, which are at present under stress.

BOBP in collaboration with the CPDC planned to hold a stakeholder consultative meeting in November 1997. As part of the preparation for the meeting, BOBP decided to conduct two surveys. One is an inventory of the village infrastructure in Kanniyakumari district, which includes fisherfolk's perceptions of their priority needs. The results of this study are published as BOBP/MM/I.

The present document describes the findings of the second survey, a descriptive study on the fishing behaviour or fishing patterns of three groups of Kanniyakumari fishermen: those who operate kattumarams, vallams and mechanised boats. It is unlikely to expect that each group will fish only in front of its own village. Kattumaran fishermen nearest to the shore and boat fishermen furthest off-shore. In fact, Kanniyakumari fishermen are well known for their travels along the coast. As a result, however, many conflicts between these groups have occurred at sea. These resource conflicts often result from an overlap in the fishing areas of different groups of fishermen – one group does not want another group to fish in a particular area, or boats of one group tear up nets belonging to the oiler group.

The extent of overlap in fishing areas between Kanniyakumari fishermen has so far not been studied. The basic questions asked in this study related simply to 'who is fishing where, for what species, and with what gear?'. The results of this study present a qualitative indication of the spatial ranges in which the three groups of fishermen from a village fish. It indicates the areas in which overlap is expected between fishermen fishing for a certain species and using a certain gear.

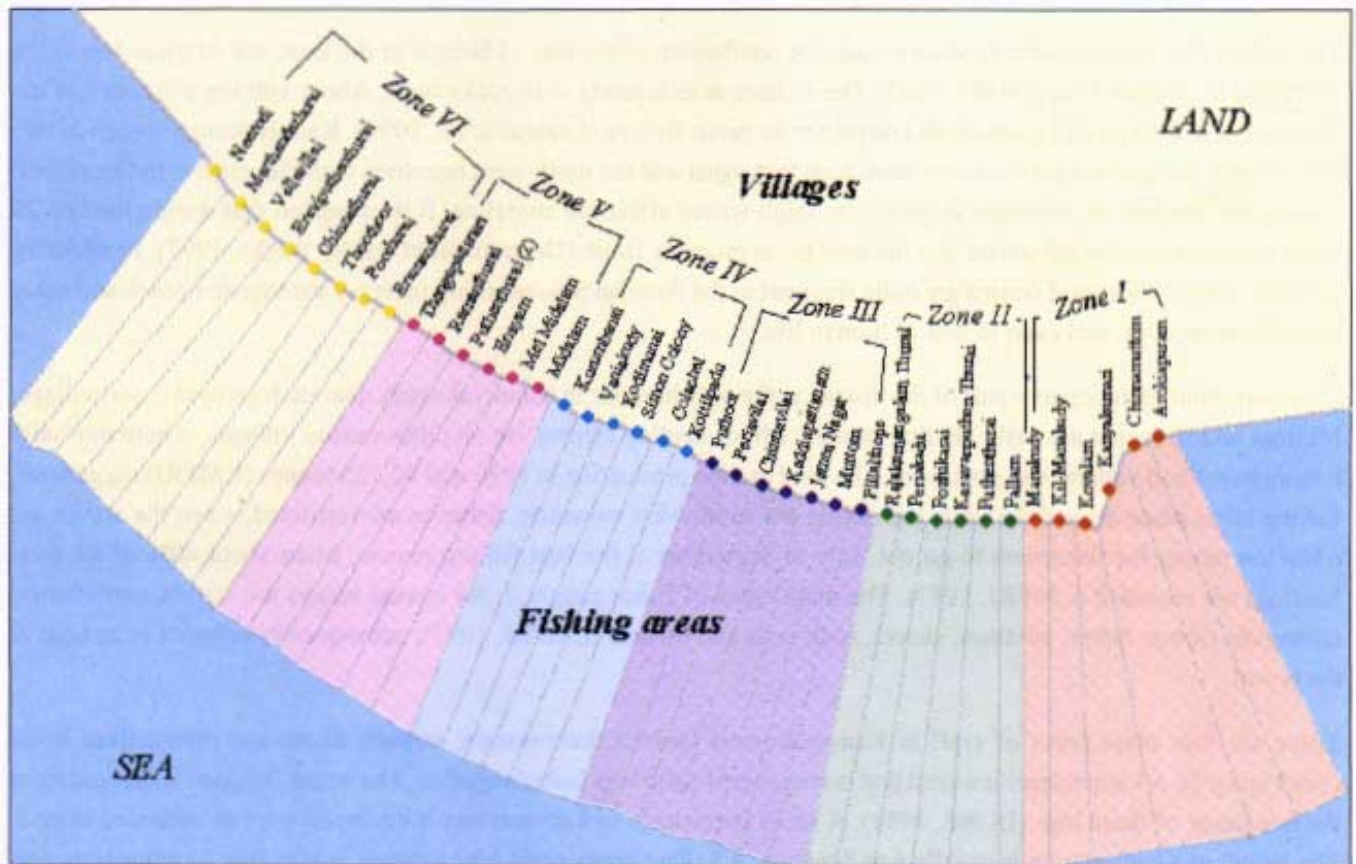
These findings will help unravel the nature and character of resource conflicts. They also served as background material for the stakeholder meeting.

1.3 Kanniyakumari District

The study area for this survey is the coastal area of Kanniyakumari District (latitude between 8°04' and 8°21'N and longitude between 77°05'E and 77°33'E; see Fig 1). The humid tropical climate, red soils and green paddy fields of Kanniyakumari district are very similar to those of the neighbouring state, Kerala.

The coastal belt of Kanniyakumari district is brisk and vibrant. There are 39 villages along the 68-km coastline. Most well known is the village Kanniyakumari, a pilgrimage centre located at the southernmost tip of the mainland, which attracts many tourists and pilgrims from all over the world. Moreover, much of the coastal land is used to soak coconuts in water pits for up to three months. The resulting husk is used to make coconut rope. Rubber plantations are another mainland use in the district. The mining factory 'Indian Rare Earths', situated near Chinnavilai, is a third industry in the district.

Fig 1 Coastal villages and fishing areas of Kanniyakumari District. This map is a sketch of the district, its coastal villages and the fishing areas used in this study. The colouring is done according to the zoning initiated by the Coastal Peace and Development Committee



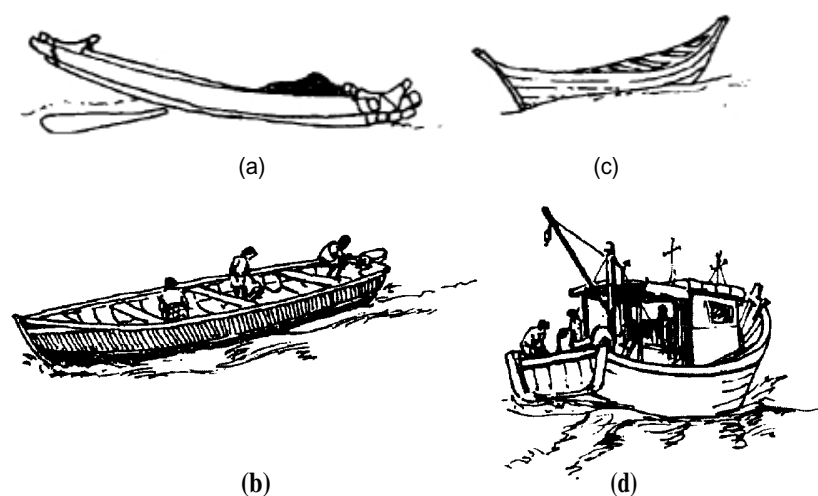
The coastal people of Kanniyakumari district are mainly Catholic, and belong to the Kottar Diocese Church. The 1986 marine fisheries census estimated the total number of coastal villagers at 115,000. This is almost 25% of the total fisherfolk population of Tamil Nadu (CMFRI, 1987). If a 1.494% increase of population (Statistics Department) is taken into account, the total number would be around 135,000 in 1997. It is estimated that of these 135,000 fishermen, 48,000 engage in active fishing.

The waters that lap the district's shores mark the confluence of the Bay of Bengal in the East, the Arabian Sea in the West and the Indian Ocean in the South. The inshore area is sandy with rocky beds. About 100 km offshore lies the Wadge Bank, a large rocky area well known for its perch fishery (Lazarus *et al.*, 1994). Kanniyakumari receives two monsoons – the south-west monsoon from June to August and the north-west monsoon from September to December. During the south-west monsoon in particular, high waves affect the shoreline. It is estimated that during the last 25 years the shoreline has advanced into the land by as much as 100m (Department of Public Works, 1997). In addition, cyclonic disturbances and storms are quite frequent in the Arabian Sea, resulting in heavy damage to houses and other valuable properties, and even to loss of human life.

Chinnamuttom in the eastern part of the district is the only harbour in Kanniyakumari district. Kanniyakumari village, Muttom and Colachel are main handling centres. Minor landing centres are all other coastal villages, where normally kattumarams and vallams can go ashore. The total marine production in 1996 was 42,125 tonnes (CMFRI). In general, fishing takes place around the year; but during the south-west monsoon, fisheries are restricted, when the waves are often too strong for fishermen to go out. July to September is the best fishing season, when about 40% of the total landings are recorded (CMFRI, 1987). The main types of fishes caught in the coastal waters are squids, cuttlefishes, carangids, ribbon fishes, sardines, sharks, rock cods and breams (CMFRI, 1997), subsequently referred to as boat in the report.

There are four main types of craft in Kanniyakumari District: kattumaram, vallam, dhoni and mechanised boats (See Figure 2). A kattumaram is a craft that is made up of solid logs lashed together. The entire flotation is derived from the buoyancy of these logs (BOBP, 1980). A small percentage of kattumarams is equipped with an outboard engine. The length of a kattumaram is usually 6 to 8 meters. A vallam or plywood boat is larger in size than a kattumaram and carries an outboard engine. Vallams are faster than kattumarams and can go out further. But during rough weather vallams are more unsafe because they can sink if too much water comes into the vessel. A dhoni is basically a plank-built vallam. It is used nowadays only for beach seining, to put the net out at sea. The fourth type of craft is the mechanised boat. This boat could be motorised (a term that refers to its propulsion) or mechanised (a term that refers to the use of its gear).

Figure 2. A Kattumaram(a), Vallam(b), Dhoni(c) and Mechanised Boat(d)



2. METHODOLOGY

In all the coastal villages of Kanniyakumari, semi-structured interviews were held with the kattumaram, vallam and boat fishermen. These interviews aimed at understanding where the fishermen usually go out to fish. Analysis of this information mainly involved setting up a data base, linking the resulting data tables to a Geographical Information System and making overlays for all the fishermen groups.

2.1 Who is fishing for what, when, where, and how?

The title of this section forms the basis for an understanding of the fishing behaviour and fishing patterns of fishermen. This question seeks the following information:

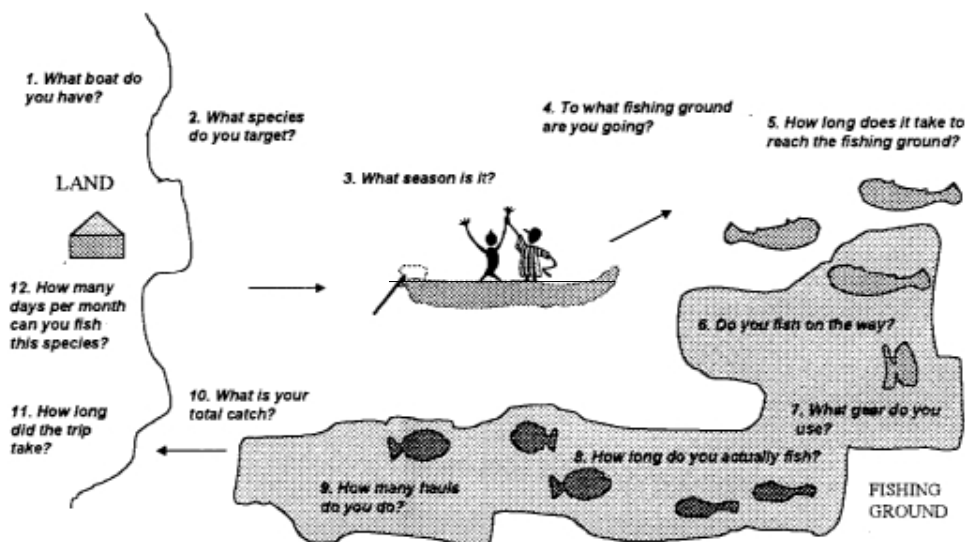
Who' is doing the fishing – a kattumaram fisherman, a vallam fisherman or a boat fisherman?

For what' species or species type is the fishing being done?

- When' does the operation take place – which season or what month?
- Where' is the location at sea?
- How' is the type of gear used for this operation?

During a single fishing trip many different species are caught, different fishing areas are visited and different gears are often used. So the series of questions has to be repeated over and over again, as in a loop (See Figure 3).

Figure 3 Questions on fishing behaviour



The best way, but also the most costly, would be to use a Geographical Positioning System (GPS) that can record the geographical position of a fisherman at sea. Together with detailed logbooks, any fishing operation and its features can be linked to the geographical position. Such detail was not the intention of this study, but the type of questions remains the same. Instead of going out to sea with the fishermen, interview sessions were done in the village itself.

2.2 Questionnaire

During June 1998, a two-week survey was carried out, covering all the 39 coastal villages of Kanniyakumari district. Interviews were done with different fishermen groups. In our definition a fisherman group refers to kattumaram, vallam or boat fishermen. In every village, interviews were held with all fishermen groups, if they were present in the village. The information about the number of vessels in the village was taken from the fishermen themselves. The criterion for an existing group in a village was a minimum of 10 vessels belonging to that village. The maximum number of interviews in a village was three, the minimum none. Each group ideally consisted of about 10 fishermen. The fishermen were mostly interviewed near the church, on the beach, or near their houses when restoring the nets.

The questions asked in the interview are shown in Table 1

Table 1. Interview form

1. List your six most important gears (1 = most important)	2. List your six most important species (1 = most important)	3. With what gear(s) are these species usually caught?
2.	2.	
3.	3.	
4.	4.	
5.	5.	
6.	6.	
4. Which months are season (S) and off-season (OS) for these species?		5. Where do you fish for this species (in season amid off-season) - from what to what village?
Species 1	S	S
	OS	OS
Species 2	S	S
	OS	OS
Species 3	S	S
	OS	OS
Species 4	S	S
	OS	OS
Species 5	S	S
	OS	OS
Species 6	S	S
	OS	OS

Question 1.

The fishermen are asked to list their six most important gears. In this context, 'most important' means the gear that is highly valuable for them. Some fishermen indicated that they found it hard to choose between a gear that is highly valuable for only three months a year, and a gear that is moderately valuable but can be used throughout the year.

Question 2.

The fishermen are asked to list their six most important species. This question usually generates hectic debate. As in the case of the gears, 'most important' should be understood as the most valuable species. Again, some fishermen were not sure whether they should rank a species that is highly valuable but is caught only three months a year, as No. 1. Or should they focus only on species that are caught throughout the year. It must be noted that women took active part in answering this question, as well as question no. 4.

Question 3.

When the list of six species was filled out, the fishermen were asked to give for each species its associated gear(s). One would expect that at least Species no. 1 is caught with Gear no. 1, but this was not always the case. In some cases, Species no. 1 was caught with a gear that did not even figure in the list of six gear.

Question 4.

The fishermen were asked to name the season and off-season months (or lean season) for each species. Fishermen discussed this question, as they know very well during which months certain species are landed.

Question 5.

The final question was the most complicated one. It aimed at finding out from where to where along the Kanniyakumari coast fishermen fish for the specified species, in season as well as off-season. The village in front of which fishing takes place is one fishing area. If more than one fishing area is covered for a species in a season this is called a fishing range. Fishing ranges are described as Kovalam to Arokiapuram' or Neerodi to Rajakamamigalam Thurai'.

In addition to these questions, some optional questions were posed. Answering them depended on the time and the enthusiasm of the interviewed group. These optional questions were the following:

1. Have your catches increased or decreased during the last 10 years?
2. Are you spending more or less time at sea nowadays than 10 years ago?
3. Has the species composition of your catch changed during the last 10 years?
4. What do you think is the reason for the smaller (or larger) catch you get now?
5. Do you know of any conflicts in this area between fishermen?

2.3 Database

Putting together the information from all the fishermen groups in all five coastal villages, a relational database was set up, using the software Microsoft Access. To distinguish between the types of information, 'identifiers' were used to classify the information by level'.

<i>Level</i>	<i>Identifier</i>	<i>Description</i>
Village level'	V ID	A number between 11 and 68 according to the village codes given by the CPDC, e.g. 34
Group level'	G ID	The previous string plus the information of the vessel. e.g. B34 or K34
Group Rank level'	OR ID	The previous string plus the rank, from 1 to 6 (according to the six species listed). e.g. B345
Group Rank Season level'	GRS ID	The previous string plus the season, either S or OS (the season or off-season of a species), e.g. B345OS

The following data tables were created:

Table 1. Species names

This table declares the English and Tamil names of the species listed by the fishermen. It has four columns. so-called fields:

1. No., species are numbered from 1 to 34;
2. Species name, the English name of the species as it is used in this database.
Note that squid and cuttlefish have been grouped together in one category, 'squid+cuttlefish'
3. Tamil name, the name of the species as mentioned by the fishermen in Tamil;
4. Latin name, the Latin name of the species (See Annex 2a).

Table 2. Gear names

This table gives the English and Tamil names of the gears listed by the fishermen. It has three fields: The first numbers the gears from 1 to 35. The second contains the gear name in English. Note that some Tamil gear names are grouped into a single category. For example, disco net and disco roll net are grouped as trammel net; the third contains the name of the gear in Tamil (see Annex 2b).

Table 3. Villages and Vessels

This table contains the names of the villages and information about the total number of crafts per fishermen group and per village as a whole. It has seven fields:

1. V1, village identifier, explained above;
2. Vcode, the code of the village as set up by the Coastal Peace and Development Committee;
3. Village name, the actual name of the village. Note that in Puthenthurai2 (Vcode 5.4), the extra '2' is added to separate this village from Puthenthurai (Vcode 2.2);
4. B, the total number of boats in a village;
5. K, the total number of kattumarams in a village;
6. V, the total number of vallams in a village;
7. Tot, the total number of crafts in a village (Source: Department of Fisheries, Nagercoil; See Annex 2c).

Table 4. Species Ranking

This table lists the six most important species named by every fisherman group. It has seven fields:

1. OLD, fishermen group identifier, explained above;
2. Rank 1 lists the species that the fishermen named as their most important species. Note that where a fisherman group does not exist in a village, this is indicated as NA;
3. Rank 2, the second most important species;
4. Rank 3, the third most important species;
5. Rank 4, the fourth-most important species;
6. Rank 5, the fifth-most important species;
7. Rank 6, the sixth-most important species (See Annex 2d).

Table 5. Gear Ranking

This table lists the six most important gears named by every fisherman group. It has the following seven fields, like Table 4:

1. GID, the fishermen group identifier explained above.
2. Rank 1, the most important gear named by the fishermen.
Note that if a fisherman group does not exist in a village, it is indicated as NA.
3. Rank 2, the second most important gear.
4. Rank 3, the third most important gear.
5. Rank 4, the fourth most important gear.
6. Rank 5, the fifth most important gear. 7. Rank 6, the sixth most important gear (See Annex 2e).

Table 6. Species and Gear

This table shows again the six species named by every fishermen group, plus the associated gear for each species. It has the following three fields:

1. GR ID, group plus rank identifier, explained above;
2. Species name, name of the species;
3. Gears, all the different types of gears used to catch the species (See Annex 20).

Table 7. Season and Range

This is the largest table, because it contains information on the season and off-season of each of the six species listed by each fisherman group. In addition, it shows the fishing range, both season and off-season, for each species. It has 16 fields:

1. GRS ID, a group, rank and season identifier, explained above;
2. Species, a repetition of the species name;
3. J - January. If January falls in the species' season or off-season it is indicated as 1.4 - 14. F, M, A, M, J, J, A, S, O, N, D, for the other months;
15. Range from, indicates the most western fishing area in Kanniyakumari district in which the fishermen catch the species. Note that fishing west of Neerodi is not included in this study;
16. Range to, indicates the most eastern village in Kanniyakumari district in which the fishermen catch the species. Note that fishing east of Arokiapuram is not included in this study (See Annex 2g).

2.4 Geographical Information System

The study results were analysed and maps prepared with GIS (Geographical Information System) software. Two programmes were used: ArcView 3.0. and Idrisi for Windows. Idrisi was used only to create the base map as shown in Figure 1.

It must be noted that this base map is not a true representation of the coastal zone of Kanniyakumari district. It is merely a drawing that shows the rounded shape of the district and the position of the villages relative to each other. The villages are shown at equal distances from each other, which is not so in reality. However, for the purpose of this study, a general base map that shows the villages and the imaginary fishing area in front of each village is enough. The width of the fishing area in front of— let us say village B—is from in between villages B and A to in between villages B and C. The length of each fishing area is not relevant, as in this study no information is collected about the distance fishermen go out at sea.

The base map was used in ArcView to create thematic maps, e.g. the spatial distribution of a fishing group fishing for a particular species in a particular season. The data tables mentioned in the previous section formed the underlying database for the thematic maps. Many of the thematic maps first needed some more analysis of the data before they could be made in ArcView. This analysis of the data was done again in MS Access, and resulted in several other tables that were exported to Arc View.

3. RESULTS

The results of this study are presented in three sections. The first section provides some general figures about the number of vessels, the number of fishermen, and the different types of species they fish and the gear they use. The next section gives an example of the analysis of the data. The last section provides maps of the fishing activity of fishermen groups in Kanniyakumari district. Detailed factsheets of each village are found in Annex 1.

3.1 General Information

Fishermen and fishermen groups

In 1986, the total number of fisherfolk in Kanniyakumari district was 114,897, of whom 24,323 were active fishermen (Department of Fisheries, Nagercoil). For 1997, the total number was estimated at 135,255, including 48,306 active fishermen. The district has 39 coastal villages of which one is not considered a fishing village: James Nagar (see Annex 2c). In the other 38 villages, kattumaram fishermen are found in all of them, vallam fishermen in 23 and boat fishermen in 14. The fishermen groups per village are shown in Table 2.

Table 2. Fishermen groups in each village of Kanniyakumari district

	Zone I (East)						Zone II						Zone III							
	Arokiapuram	Chinnamuttom	Kanniyakumari	Kovalam	Kil-Manakudy	Manakudy	Pallam	Puthenthurai	Kesavanputhen Thurai	Pozhikarai	Periakadu	Rajakamangalam Thurai	Pillaithope	Muttom	James Nagar	Kaddiapattanam	Chinnavilai	Periavilai	Puthoor	
Kattumaram	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	
Vallam	✓	✓	✓			✓							✓		✓			✓		
Boat		✓	✓												✓					
	Zone IV						Zone V						Zone VI (West)							
	Kottilpadu	Colachel	Simon Colony	Kodimunai	Vaniakudy	Kurumbanai	Midalam	Mel Midalam	Enayam	Puthenthurai	Ramanthjurai	Thengapattanan	Eramanthurai	Poothurai	Thoothoor	Chinnathurai	Eraviputhenthurai	Vallavilai	Marthandathurai	Neerodi
Kattumaram	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Vallam		✓	✓			✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Boat	✓	✓	✓	✓	✓	✓								✓	✓	✓	✓	✓	✓	✓

For this study the number of villages with vallam or boat fishermen is based on a minimum of 10 crafts per village. This figure was taken from the fishermen of each village. The figures obtained are slightly different from the information received from the Department of Fisheries, Tamil Nadu. If the same criteria apply to the data from the Department, a few more villages would have a vallam and boat fishermen group (see Annex 2c).

Vessels

There are 12,639 fishing crafts in Kanniyakumari district (Department of Fisheries, Nagercoil). Of this total number, more than 60% (amounting to 7,919) are kattumarams, 25% (3,271) are vallams and about 10% (1,449) are boats (see Annex 2c). The highest number of kattumarams is found in Kaddiapattanam, Muttom and Kanniyakumari. These villages have 25% of all the kattumarams found in the district. The highest number of vallams is found in Neerodi, Vallavillai and Kurumbanai. The highest number of boats is found in Cotachel and Thoothoor. Chinnamuttom, the only harbour in the district, apparently has only 24 mechanised boats. This suggests that most of the boats staying in Chinnamuttom harbour are from other villages.

Species

The 75 fishermen groups found in Kanniyakumari district (38 kattumaram groups, 23 vallam groups and 14 boat groups) listed the six most important species they fish. This list of fishes resulted in 34 different species (see Annex 2a for species names and Annex 2d for the ranking of species by fishermen group). Squid and cuttlefish were treated as the same species, as it was found that fishermen used the names interchangeably. In the list, 57 out of 75 fishermen groups (=76%) mentioned shrimp as one of their six most important species, and 51 groups (=68%) mentioned squid! cuttlefish (see Table 3). Other frequently mentioned species were seer fish (42 groups/56%), tuna (31 groups/41%) and grouper (28 groups/37%). The kattumaram and vallam groups both mentioned shrimp most often as one of their six species, 33 out of 38 groups (87%) and 19 out of 26 groups (70%) respectively. The boat groups: 8 out of 14 (57%) mentioned squid+cuttlefish, grouper and shark as one of their six species.

Table 3. Number of fishermen groups (kattumaram, vallam or boat) that mentioned a species as one of their six most important species

	K	V	B	Tot		K	V	B	Tot
Shrimp	33	19	5	57	Ribbonfish	4	1	1	6
Squid+Cuttlefish	28	15	8	51	Pomfret	2	2	1	5
Seer fish	24	15	3	42	Barracuda		3	1	4
Tuna	13	15	3	31	Elagatis (Jack)	1	3		4
Grouper	12	8	8	28	Triggerfish	3		1	4
Rock cod	4	12	6	22	Whitefish	4			4
Caranx	6	12	3	21	Emperor bream	2		1	3
Sardine	20		1	21	Sailfish	1	1	1	3
Anchovy	19		1	20	Spotted Rock cod	1		2	3
Mackerel	10	5	2	17	Barracuda (Neduvai)		1	1	2
Shark	4	1	8	13	Hard tail scad		2		2
Scad	5	4	3	12	Sardine (Keerimeen)	2			2
Threadfin bream	2	5	5	12	Silver belly	2			2
Lobster	6	3		9	Butterfish	1			1
Trevally	6	2	1	9	Flatfish		1		1
Vella	6	3		9	Halfbeak	1			1
Seer fish (Seela)	4	2	1	7	Leather Jacket	1			1

K: Number of kattumaram groups (= villages) - maximum is 38 groups

V: Number of vallam groups (= villages) - maximum is 23 groups

B: Number of boat groups (= villages) - maximum is 14 groups

Tot: Total number of groups - maximum is 75 groups from 39 different villages

Gear

Similarly, the fishermen also listed their six most important gear. This list resulted in 28 different gear (see Annex 2b for gear names and Annex 2e for the ranking of gears by fishermen group). The list indicates the importance of the different types of gear, without taking into consideration the species associated with each type. In the list, 58 out of 75 fishermen groups (=77%) mentioned handline as one of their six most important gear and 55 groups (=73%) mentioned trammel nets (see Table 4). Other frequently mentioned gear were longline (45 groups/60%), sardine (34 groups/45%) and anchovy net (32 groups/42%). Kattumaram groups mentioned both handline and trammel net most often (31 out of 38 groups/82%). Vallam groups that mentioned both trammel net and longline were 20 out of 26 (77%). Nine out of 14 boat groups (64%) mentioned mostly longline.

Table 4. Number of fishermen groups (kattumaram, vallam or boat) that mentioned a gear as one of their most important gears

	K	V	B	Tot		K	V	B	Tot
Handline	31	19	8	58	Prawn net	3	1		4
Trammel net	31	20	4	55	Rol net	4			4
Longline	16	20	9	45	Trawl net			4	4
Sardine net	30	4		34	Beach seine	2			2
Anchovy net	29	3		32	Drift net (small twines)	1	1		2
Drift net	7	17	4	28	Handline (jig)	2			2
Monofilament net	20	4	1	25	Light fishing		2		2
Mackerel net	10	10		20	Disco rope net			1	
Trolling line	8	9	3	20	Drift net (big)	1			1
Boat seine	9	2		11	Handline (M)		1		
Bottom set gill net	5	3		8	Handline (RT)		1		
Scoop net	3	1	3	7	Lobster net	1			
Disco fish	3	2		5	Rope net	1			
Disco line	2	3		5	Shark line		1		

K: Number of kattumaram groups (= villages) - maximum is 38 groups

V: Number of vallam groups (= villages) - maximum is 23 groups

B: Number of boat groups (= villages) - maximum is 14 groups

Tot: Total number of groups - maximum is 75 groups from 39 different villages

The total number of fishing gear in Kanniyakumari is for trawl net: 415; gill net: 9327; longline: 2904; traps: 164; shore seine 591 and others: 2211 (Fisheries Census 1986).

Gear associated with species

The fishermen groups listed also the gear they use to catch the six species mentioned earlier. This list shows all the types of gear associated with each species (see Annex 2f for gears and species by fishermen group). There are 26 different gear associated with these 34 different species. Kattumaram, vallam and boat groups aggregated in the list of gears associated with these species, shrimp/trammelnet was mentioned by 53 out of 75 groups (=70%) and squid-cuttlefish/handline by 36 groups (=48%)(see Table 5). Other frequent combinations are seer fish/handline (33 groups 44%) and seer fish/drift net (28%). For the kattumaram and vallam fishermen, the species-gear combination mostly chosen is shrimp/trammelnet (30 out of 38 groups/79% and 19 out of 26 groups!73% respectively). For boat fishermen it is shark/longline (7 out of 14 groups/50%). More information by fishermen group on species and associated gear is given in Table 6.

**Table 5. Frequency of selected species and associated gear mentioned by the fishermen groups
(total of kattumaram, vallam and boat groups n = 75)**

	Handline	Longline	Trammel net	Drift net	Trolling line	Mackerel net	Monofilament net	Trawl net	Bottom set gill net	Disco fish	Disco line	Scoop net
Grouper	19	17	2	2	3		4	4	5			2
Mackerel	8	2				12	3					2
Rockcod	14	16		2	2	1	3	2				
Squid/Cuttlefish	36	1	4		1		2	3		6	5	3
Seer fish	33	33	2	21	12	1						
Shark	5	10		3	1							
Shrimp	1		53				3	1	1		1	
Tuna	16	11		15	4	7	3				1	

Table 6. Frequency of species and associated gear mentioned by (a) kattumaram fishermen (n=38), (b) vallam fishermen (n=23) and (c) boat fishermen (n14)

a																				
Kattumaram	Handline	Trammel net	Longline	Sardine net	Anchovy net	Trolling line	Drift net	Monofilament net	Mackerel net	Boat Seine	Bottom set gill net	Beach Seine	Disco fish	Rot net	Disco line	Rope net	Scoop net	Handline (Jig)	Prawn net	Other gears
Seer fish	20	|	5			9	9					2		|						
Squid+Cuttlefish	24	3				|		|		|			4		|		|	2		
Shrimp	|	30						|							|	|			2	
Grouper	11	|	6			|		3			3			|						
Anchovy	|				19					2										
Sardine	|	|		19	|															
Tuna	7		2	|			4	2	4											
Mackerel	3		|	2	|			2	7					2						
Trevally	5	|	2					3		|	|									
Vella	5	2	2			|														
Caranx	6		|			2														
Scad	4			2	|															2
Rockcod	4		2								|									
Seer fish (Seela)	3		|			|														
Lobster											3									
Shark	2					|														
Whitefish	|							|		2										
Ribbon fish										4										
Triggerfish	|		|														2			
Emperor bream	2																			
Silver belly										|		2								
Pomfret							|	|												
Sardine (Keerimeen)				2																
Threadfin bream	2																			
Other species	5										|									

b												
Vallam	Handline	Longline	Drift net	Trammel net	Trolling line	Mackerel net	Monofilament net	Bottom set gill net	Disco fish	Disco line	Light fishing	Other gears
Seer fish	11	7	11	1	3	1						
Tuna	8	8	9		3	3	1					
Shrimp				19			2					
Rockcod	6	10	1		1	1	2					
Caranx	7	9		1	1		1					
Squid+Cuttlefish	10			1			1		2	4		
Grouper	4	7	2	1	1		1	2				
Mackerel	2	1				5	1					
Threadfin bream	3	3		1								
Barracuda	3	1	1		1							
Vella	3		2		1							
Elagatis (Jack)	1	2	2									
Lobster			1	1			1	2				
Scad	4					1						
Seer fish (Seela)	1		2		2							
Trevally	2	2	1									
Hardtailscad	2		1									
Pomfret			2									
Ribbon fish	1											
Shark	1	1										
Other species	2			1								

C									
Boat	Longline	Handline	Trawl net	Scoop net	Drift net	Trammel net	Trolling line	Monofilament net	Disco rope net
Grouper	4	4	4	2			|		
Rockcod	4	4	2		|		|	|	
Shark	7	2	|		3				
Squid+Cuttlefish	|	2	3	2					
Threadfin bream	2	3		2			|		
Caranx	3	1	|		1				
Spotted Rock cod	2	2	|				|		
Shrimp			|			4			
Tuna	|	|			2		|		
Seerfish	|	2							
Barracuda (Neduvai)	|	|	|						
Scad				3					
Trevally	|	|							
Mackerel				2					
Seer fish (Seela)	|								
Other species			2	5					

Section 3.3 will provide more details about the fishing areas of a selected number of species and gears. For this purpose, eight species and 12 gears were selected (see Table 5), Before these maps of fishing areas are shown, Section 3.2 will provide a briefing on the interpretation of the maps.

3.2 Example of a map

The results of the study are used to graphically represent the fishing activities of the three fishermen groups for certain species during certain seasons when they use certain gears. The resulting maps can be read easily only by a trained eye. This section discusses with an example how the final maps were developed. All the final maps are presented in Section 3.3

In this example, the final map will show the fishing areas of grouper during the peak season for grouper of all three fishing groups. The villages differ in the matter of which months are considered to be season and off-season for grouper; this has not been taken into account in this study, because it is assumed that a rough season/off-season distinction is closer to reality than a detailed month-wise analysis.

In order to create an aggregated map of kattumaram, vallam and boat groups, each group was analysed separately. In some villages, nobody mentioned grouper as one of their six most important species. Figure 4a shows the fishing areas of the kattumaram fishermen in Simon Colony. From the village factsheets in Annex 1, we can see that these fishermen fish for grouper from Kodimunai to Kanniyakumari. The kattumaram fishermen of neighbouring Kodimunai also fish

for grouper, but they go from Puthenthurai to Muttom. This means that from Kodimunai to Muttom there is a potential overlap between both villages; or, in that range two groups are operating, fishing for the same species, during the same time of the year. The next step is to show the total of 12 kattumaram groups and their fishing areas in one figure (see Figure 4b). This figure shows a high concentration of groups around two places: Kanniyakumari village and Muttom. Moreover, we can see that the western villages of the district do not fish for grouper, or at least they did not mention grouper as one of their six most important species.

Likewise, fishing areas are shown of the vallam fishermen from Manakudy (Figure 5a), fishing for grouper from Muttom to Arokiapuram. In total, vallam fishermen from eight villages fish for grouper from Neerodi to Kanniyakumari, with most fishermen groups covering the coastal areas of Zone 2.

Similarly, the boat fishermen of the coastal villages also fish for grouper during the grouper season. Figure 6a shows the fishing areas of the Chinnamuttom boat fishermen, which indicate that they catch grouper from Colachel to Arokiapuram. There are eight villages in which boat fishermen say that grouper is one of the six most important species. All eight groups fish from Neerodi to Arokiapuram, with the highest concentration of groups in Zones 2 and 3 (see Figure 6b).

After having seen the fishing activities of all kattumaram fishermen (Fig. 4b), vallam fishermen (Fig. 5b) or boat fishermen (Fig. 6b), we can make two final maps aggregating the three groups. The first map sums up the number of groups occurring in each fishing area. It indicates the 'crowdedness' of fishing groups from all fishing villages, but does not make a distinction between kattumaram, vallam or boat fishermen (see Figure 7a). The second map is a simplification of the first one, and does not indicate the number of fishing groups fishing in a particular area, but specifies only what type of fisherman group fishes in each area. It shows the 'overlap' between different groups of fishermen.

In the next section, similar maps will be shown for grouper and other species, prepared in the same way. In these maps, however, a distinction is made according to the main type of gear used to catch the species. Thus, the resulting maps show 'crowdedness' and 'overlap' not only by species, but also by gear.

3.3 Fishing patterns for selected species

In this section, final maps are presented of fishing patterns related to a selected number of species. Eight species were selected: grouper, mackerel, rock cod, squid/cuttlefish, seer fish, shark, shrimp and tuna. These species were selected on the basis of how often the fishermen mentioned them as one of their most important species. It was also taken into account that a species was either very important for all three fishermen groups, or for one group in particular. For example, sharks are not an important species for all three groups, but are extremely important for the boat sector and are therefore included in the study. Other species, such as squids/cuttlefish and shrimps, are important for all three groups.

The final maps of this section show the fishing areas of the selected species. All maps indicate the fishing activity of the species during the peak season (of that particular species) only.

Grouper

When comparing the months indicated by each fisherman group as peak or lean season for grouper, there is no clear pattern as to what months constitute peak or lean season. Some groups fish the whole year round for groupers, some mostly in June-July-August, others are active mainly from December to March. Boat fishermen, except the boat fishermen of Kanniyakumari, fish mostly during June-July-August. There are no kattumaram fishermen west of Midalam that consider grouper as one of their six most important species. The vallam and boat groups fishing for grouper are evenly distributed over the district.

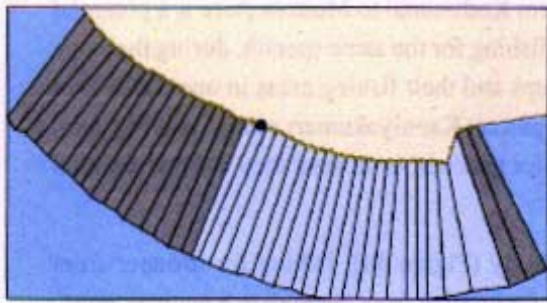


Figure 4a. Fishing areas of the kattumaram fishermen in Simon Colony, fishing for grouper during the grouper season

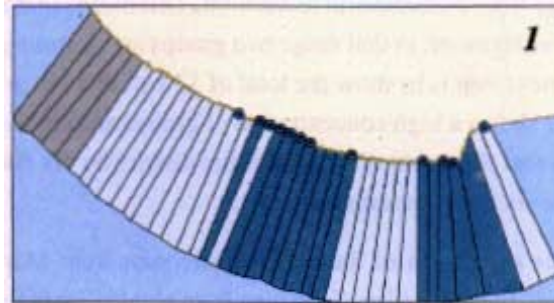


Figure 4b. Fishing areas of all kattumaram fishermen (12 villages), fishing for grouper during the grouper season

AIK groups fishing
0
1-3
4-6

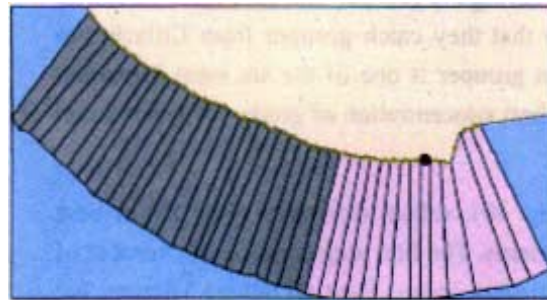


Figure 5a. Fishing areas of the vallam fishermen in Manakudy, fishing for grouper during the grouper season

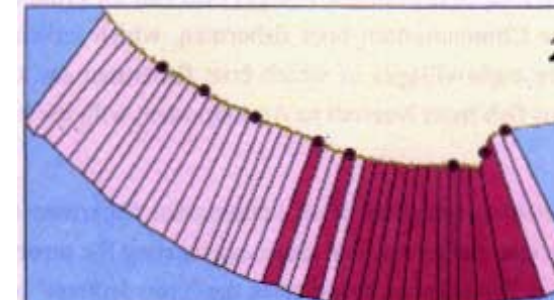


Figure 5b. Fishing areas of all vallam fishermen (8 villages), fishing for grouper during the grouper season

AIIV groups fishing
0
1-3
4-6

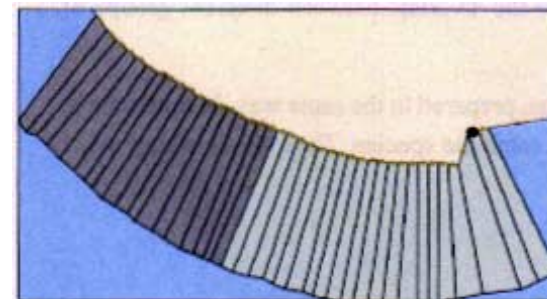


Figure 6a. Fishing areas of the boat fishermen in Chinnamuum, fishing for grouper during the grouper season

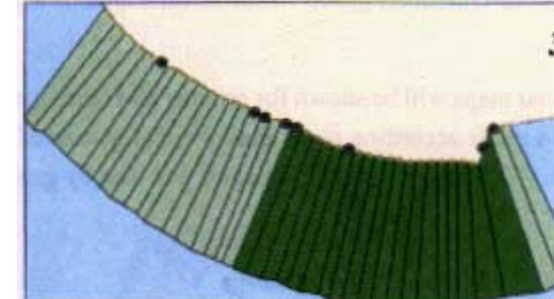


Figure 6b. Fishing areas of all boat fishermen (8 villages), fishing for grouper during the grouper season

All B groups fishing
0
1-3
4-6
7-9

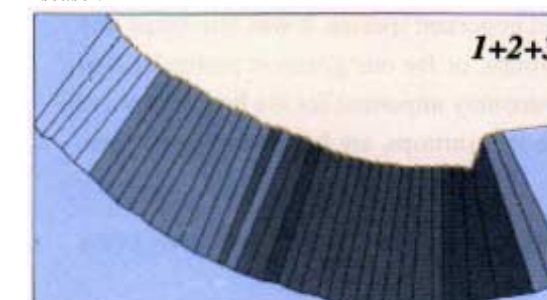


Figure 7a. Fishing areas of the kattumaram, vallam and boat fishermen, fishing for grouper during the grouper season



Figure 7b. Overlap in fishing areas between kattumaram, vallam and boat fishermen, fishing for grouper during the grouper season

V and B
K, V and B

All K. V. B groups
0
1-4
5-8
9-12
13-16
>16

From the results shown in Figure 8a, fishing for grouper mostly takes place in Zone 1 (Kanniyakumari to Pallam) and Zone 3 (Muttom to Puthoor), where a maximum of 16 to 20 fishermen groups fish. All other fishing areas have a minimum of 6 to 10 fishermen groups (Zone 6). Furthermore, Figure 8b indicates that except for some fishing areas in Zone 6 (Chinnathurai to Neerodi), kattumaram, vallam and boat fishermen groups overlap in all other fishing areas.

Mackerel

Only the kattumaram and vallam groups of the most western villages in Kanniyakumari district mentioned mackerel as one their six most important species. There are only two boat groups fishing for mackerel, in Kodimunai and Colachel. Similar to the case with groupers, there are no clear peak and lean seasons for mackerel, at least as indicated by the answers of fishermen. Some groups fish throughout the year, some from December to March and others from June to August. The two boat groups fish for mackerel during June-July.

Figure 9a shows that the fishing areas of Zones 1 to 4 – Arokiapuram to Kurumbanai – are less crowded than the fishing areas of the last two zones – Midalam to Neerodi. In the last two zones, there are at least six fishermen groups fishing in each fishing area. Figure 9b indicates that in Zones 5 and 6 – Midalam to Neerodi – there is a total overlap between kattumaram, vallam and boat groups. The other fishing areas show an overlap only between vallam and boat groups.

Rockcod

Vallam groups fishing for rock cod are mainly located in the western part of Kanniyakumari district. Kattumaram groups are mainly in the central and eastern areas, and boat groups are both in the East and West, but not in the central part. The peak season for rock cod for kattumarams is from June to September, vallams fish more or less throughout the year, and boats mainly fish from September to May.

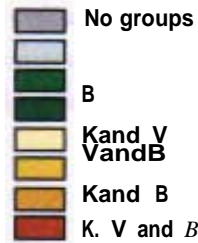
Figure 10a shows that the fishing areas in Zones 1 and 2 – Kanniyakumari to Muttom – have a maximum of 16 to 20 fishing groups fishing for rock cod. The western part of the district – Vaniakudy to Neerodi – and the two most eastern fishing areas – Arokiapuram and Chinnamuttom – are less crowded, with 6 to 10 fishing groups. Furthermore, Fig 10b shows that the fishing areas in the central and eastern part of the district – Arokiapuram to Kodimunai – all show a high level of overlap between kattumaram, vallam and boat fishermen groups. The western fishing areas – Vaniakudy to Neerodi – show an overlap only between vallam and boat fishermen groups.

Squid/ Cuttlefish

Squids and cuttlefish are fished by a large number of fishermen groups in the district, which are mainly kattumaram groups. The groups fishing for squids and cuttlefish are evenly distributed throughout the district. Kattumarams and vallams fish for squids and cuttlefish mainly between June and October/November, boats mainly between June and September.

Figure 11a shows that the number of fishermen groups fishing for squids or cuttlefish is the highest in zone 3 – Muttom to Colachel – with up to 30 fishermen groups per fishing area. In the other areas, up to 20 fishermen groups fish, except for the fishing areas in front of Arokiapuram and Chinnamuttom where up to 10 fishermen groups fish. Figure 11b shows that in all zones – from Arokiapuram to Neerodi – there is a total overlap between kattumaram, vallam and boat fishermen groups fishing for squids or cuttlefish.

Legends



Number offishermen groups

Overlap between K, V and B.



Figure 8a. Fishing areas ofkattumaram, vallam and boat fishermen aggregated, fishingfor grouper.



Figure 8b. Overlap in fishing areas ofkattumaram, vallam and boatfishermen, fishingfor grouper.

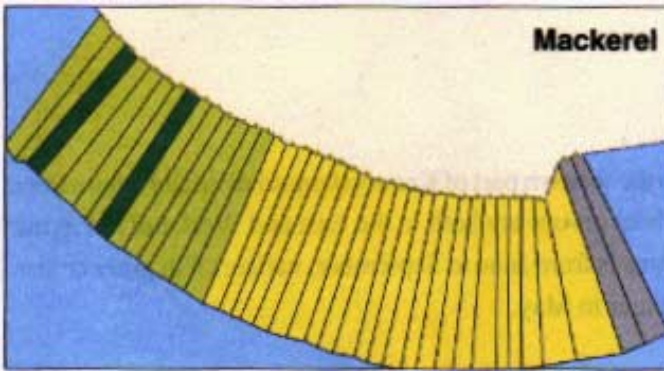


Figure 9a. Fishing areas ofkattumaram, vallam and boat fishermen aggregated, fishingformackerel.

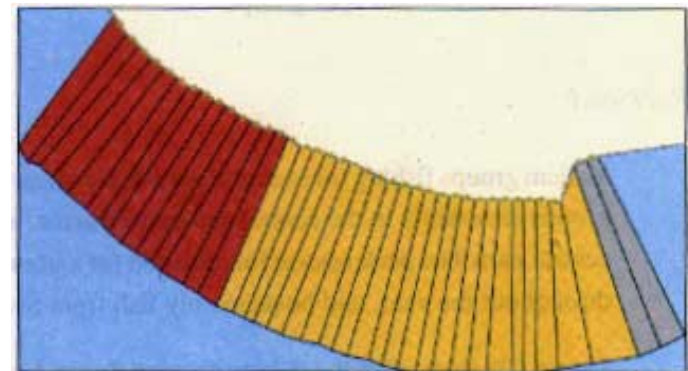


Figure 9b. Overlap in fishing areas ofkattumaram, vallam and boatfishermen, fishingformackerel.

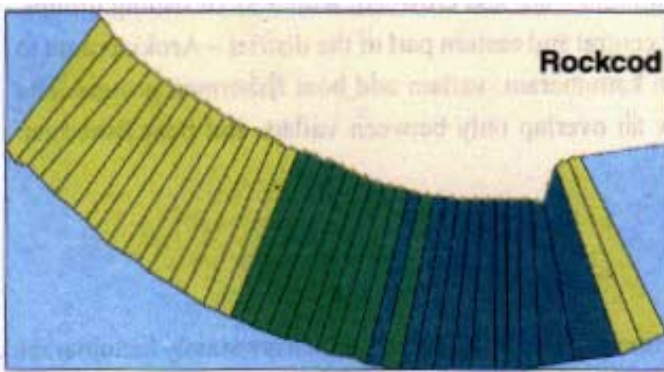


Figure 10a. Fishing areas ofkattumaram, vallam and boat fishermen aggregated, fishingfor rock cod.

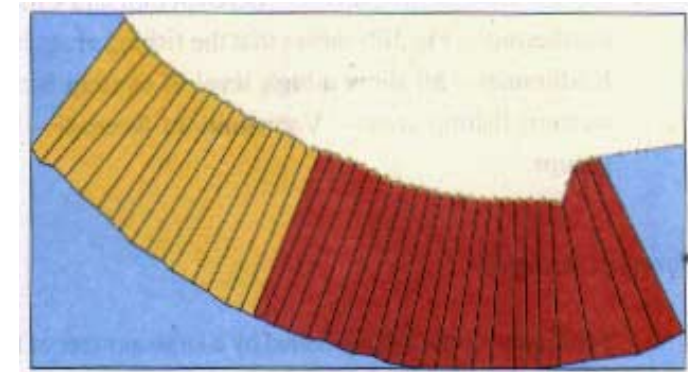


Figure 10b. Overlap in fishing areas ofkattumaram, vallam and boatfishermen, fishingfor rock cod.

Seerfish

The kattumaram groups fishing for seer fish are mostly found in the central and eastern part of Kanniyakumari district, whereas the vallam groups are mostly just in the central part. The boat groups are more dispersed. Kattumarams and vallams mainly fish for seer fish from August to February. The three boat groups mentioned the period June to August as the peak season,

Figure 12a shows that the fishing areas of the central zones 3 and 4— Muttom to Enayam – are most crowded, with up to 25 groups fishing. The fishing areas in front of Arokiapuram and Chinnamuttom are least crowded – up to five fishermen groups only. Figure 12b shows that except for the fishing areas in front of Arokiapuram and Chinnamuttom (only kattumaram and vallam groups), there is a total overlap between the three types of fishermen groups, fishing for seer fish.

Shark

Shark is fished by eight boat groups of the western part of the district. The four kattumaram groups and one vallam group that also fish for shark are more dispersed throughout the district. The season for shark fishing is mostly throughout the year; though most boat groups said the season is from June to August, other boat groups mentioned that they fish from September to March.

Figure 13a shows that except for two fishing areas – Kanniyakumari and Manakudy – with 11 to 15 fishermen groups fishing for shark, all the other areas have 6 to 10 fishermen groups. Figure 13b shows that all fishing areas of zones 2 and 3 as well as most fishing areas of zones 1 and 5— Kanniyakumari to Colachel and Mel Midalam to Thengapattanan – show that the three types of fishermen groups overlap. In the two eastern villages – Arokiapuram and Chinnamuttom – only boat groups operate for shark.

Shrimp

Shrimp is regarded by most of the kattumaram and vallam fishermen groups as their most important species. These groups are located mainly in the central and eastern part of the district. The season for shrimp is for all fishermen groups from June to August.

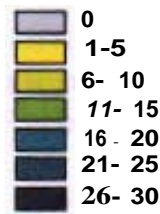
Figure 14a shows that there are not less than 11 fishermen groups fishing for shrimp in any fishing area in the district. The most crowded zones are 3, 4 and 5 – Rajakamangalam Thurai to Thoothoor – with more than 21 fishermen groups fishing. The same number of groups is also found from Kanniyakumari to Manakudy. Regarding the overlap between the different types of vessels, Fig 14b shows a total overlap in all the fishing areas of the district.

Tuna

All villages that fish for tuna are located in the western part of the district. The season for tuna fishing is throughout the year. The eastern kattumaram groups seem to fish more from October to April, whereas the western kattumaram groups mainly fish from May to September.

Figure 15a shows that except for the fishing areas in front of the two eastern villages Arokiapuram and Chinnamuttom, in all the other fishing areas a minimum of 16 to 20 fishermen groups are fishing for tuna. As in the case with shrimp fishing, overlap between the three different types of craft is apparent in all fishing areas of the district (see Figure 15b).

Legends



Number offshermen groups

Overlap between K, V and B

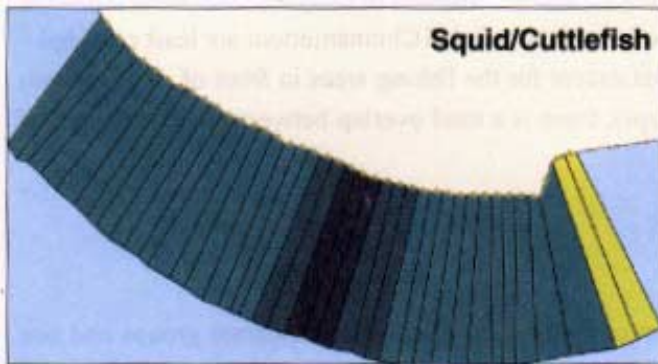


Figure 11a. Fishing areas of kanumaram, vallam and boat fishermen aggregated, fishing for squid/cuttlefish.

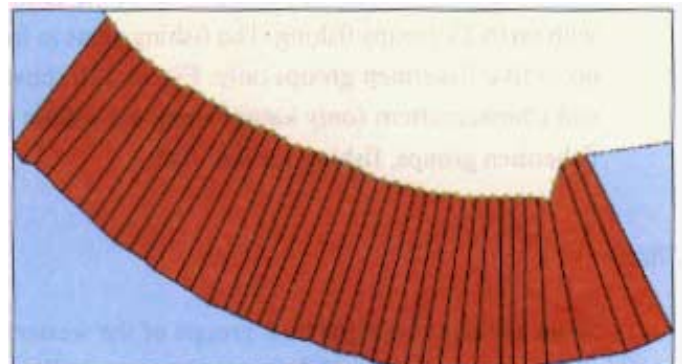


Figure 11b. Overlap in fishing areas of kattumaram, vallam and boat fishermen, fishing for squid/cuttlefish.

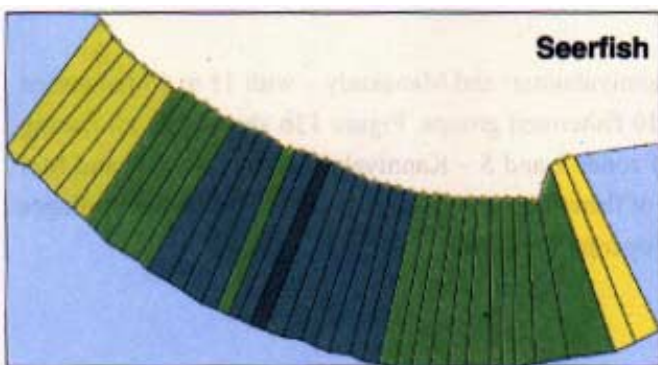


Figure 12a. Fishing areas of kattumaram, vallam and boat fishermen aggregated, fishing for seerfish.

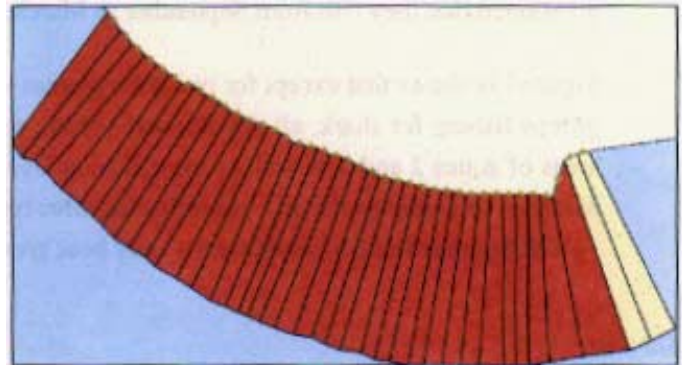


Figure 12b. Overlap in fishing areas of kattumaram, vallam and boat fishermen, fishing for seerfish.

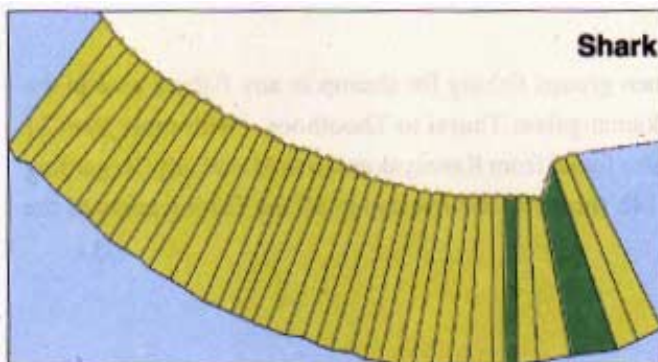


Figure 13a. Fishing areas of kattumaram, vallam and boat fishermen aggregated, fishing for shark.

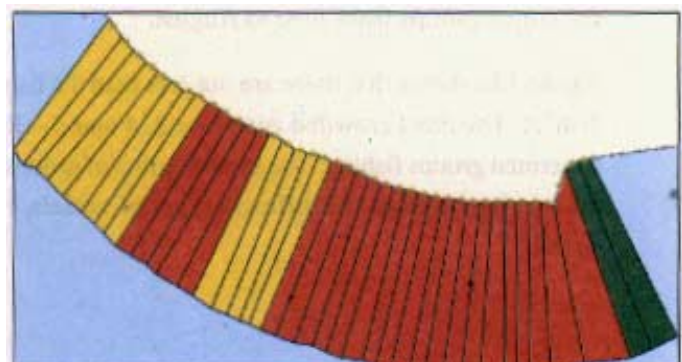
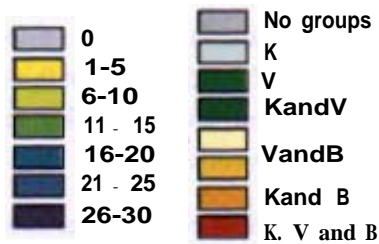


Figure 13b. Overlap in fishing areas of kattumaram, vallam and boat fishermen, fishing for shark.

Legends



Number of fishermen groups

Overlap between K, V and B



Figure 14a. Fishing areas of kattumaram, vallam and boat fishermen aggregated, fishing for shrimp.

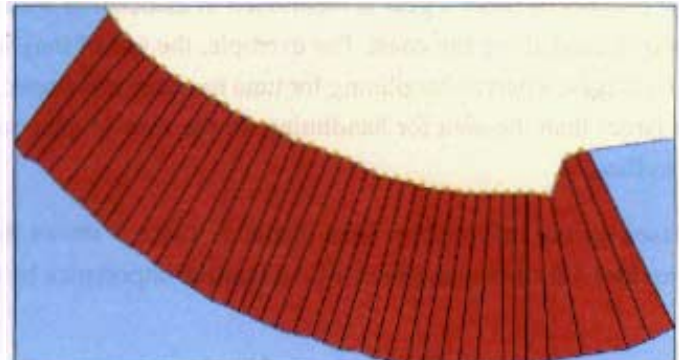


Figure 14b. Overlap in fishing areas of kattumaram, vallam and boat fishermen, fishing for shrimp.

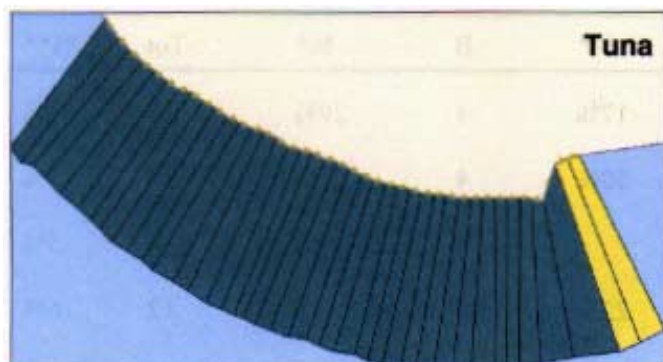


Figure 15a. Fishing areas of kattumaram, vallam and boat fishermen aggregated, fishing for tuna.

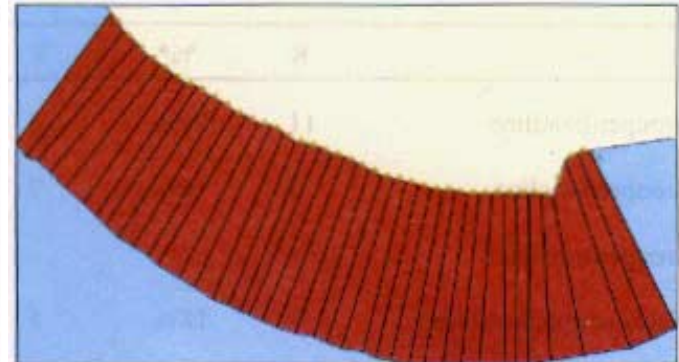


Figure 15b. Overlap in fishing areas of kattumaram, vallam and boat fishermen, fishing for tuna.

3.4 Fishing patterns for selected species and gear

In this section, final maps are presented of fishing patterns related to a selected number of species and their associated gears. Eight species and 12 gears were selected (see Table 5), but from this list only the most frequent species-gears are selected. The species are: grouper, mackerel, rock cod, squid/cuttlefish, seer fish, shark, shrimp and tuna. Associated with these species are 12 main gear, those most frequently used.

In this section, fishing areas are shown for each of these eight species and their most frequently used gear. However, the number of times a gear is mentioned in association with a certain species is not indicative of how extensively that gear is used along the coast. For example, the use of longline for tuna has been mentioned by the fishermen in only 11 villages, whereas handlining for tuna has been mentioned in 16 villages, but the fishing area taken up for longlining is larger than the area for handlining. In the case of tuna, longline and drift net have been selected in this study, not handline.

Based on the information from Table 5, Table 7 shows the species/gear combinations selected for this study and provides a further breakdown of the relative importance by fishermen group.

Table 7. Number of kattumaram, vallam and boat fishermen groups fishing with the species-gear combinations selected for this study

	K	%*	V	%*	B	%*	Tot	%**
Grouper/handline	11	29%	4	17%	4	29%	19	25%
Grouper/longline	6	16%	7	30%	4	29%	17	23%
Grouper/trawl net					4	29%	4	5%
Mackerel/mackerel net	7	18%	5	22%			12	16%
Rockcod/longline	2	5%	10	43%	4	29%	16	21%
Rockcod/handline	4	11%	6	26%	4	29%	14	19%
Squid-cuttlefish/handline	24	63%	10	43%	2	14%	36	48%
Squid-cuttlefish/trawl net					3	21%	3	4%
Seerfish/handline	20	53%	11	48%	2	14%	33	44%
Seerfish/driftnet	9	24%	11	48%	1	7%	21	28%
Shark/longline	2	5%	1	4%	7	50%	10	13%
Shrimp/trammel net	30	79%	19	83%	4	29%	53	71%
Tuna/drift net	4	11%	9	39%	2	14%	15	20%
Tuna/longline	2	5%	8	35%	1	7%	11	15%

* Percentage of kattumaram (n=38), vallam (n=23) and boat (n=14) fishermen groups

**percentage of total number of fishermen groups (n=75)

The table shows that around 80 per cent of both the kattumaram and vallam fishermen groups fish for shrimp using trammel net. The second most popular species-gear combination for kattumarams is handlining for squids or cuttlefish (63%). For vallams, the second most occurring species-gear combination is seer fish with either handline or drift net (48%). For the boat groups, 50% of the groups do longlining for sharks.

The final maps given in this section show the fishing areas of the selected species-gear combinations. All maps indicate the fishing activity of the species during the peak season (of that particular species) only.

Grouper/Handline

From the results shown in Figure 16a, handlining for grouper mostly takes place from Zone I to Zone 6 (up to Puthenthurai), the highest activity being from Muttom to Colachel and from Kanniyakumari to Pallam. In the high-activity areas, nine to twelve fishermen groups, mostly kattumaram groups, have indicated that they fish in these areas. Figure 16b further indicates that in all fishing areas up to Thoothoor, there is a total overlap of kattumaram, vallam and boat fishermen. The other areas show an overlap of only vallam and boat fishermen.

Grouper/Longline

A similar situation exists with the use of longline for grouper. Fewer kattumarams and more vallams use longline than handline, but the fishing patterns are similar. Most fishing activity takes place from Zone I to Zone 6 (up to Puthenthurai), with the highest activity being from Kanniyakumari to Pallam (Figure 17a). Overlap between kattumaram, vallam and boat fishermen takes place in most parts of the district waters, from Arokiapuram to Puthenthurai. The other areas show an overlap of vallam and boat fishermen only (Figure 17b).

Grouper/Trawl net

Only four boat fishermen groups said that grouper is one of their six most important species. These groups are from Chinnamuttom, Kanniyakumari, Kaddiapattanam and Kurumbanai. The largest number of groups in any part of the district waters is therefore only four (Figure 18a). However, one must realise that in this study the number of vessels of each fishing group and the impact of the fishing operation have not been taken into account. And because only boat fishermen use trawl nets, there can obviously be no overlap between boats, kattumarams and vallams using trawl nets (Figure 18b).

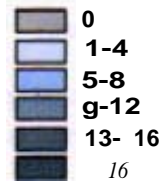
Mackerel/Mackerel net

There are seven kattumaram and five vallam groups fishing for mackerel using mackerel nets. This is a relatively small figure, compared to other species and gears in the district (see Figure 19a). All these kattumaram and vallam groups are located on the western side of the district, where most of the fishing activity takes place. As there are no boat groups that indicated mackerel (in combination with mackerel net) as one of their six most important species, the overlap in fishing areas is only between kattumarams and vallams. Overlap between the two groups occurs between Neerodi and Midalam. East of Midalam, up to Kanniyakumari, only vallams are fishing for mackerels with mackerel nets; east of Kanniyakumari, no groups have said they fish for mackerels with mackerel nets (see Figure 19b).

Rockcod/Longline

Figure 20a shows the fishing activity of fishermen groups, mainly vallam groups, fishing for rock cod using longline. Though the entire district has quite a high number of groups fishing for rock cod, with most vallam

Legends



Number of fishermen groups

Overlap between K, V and B

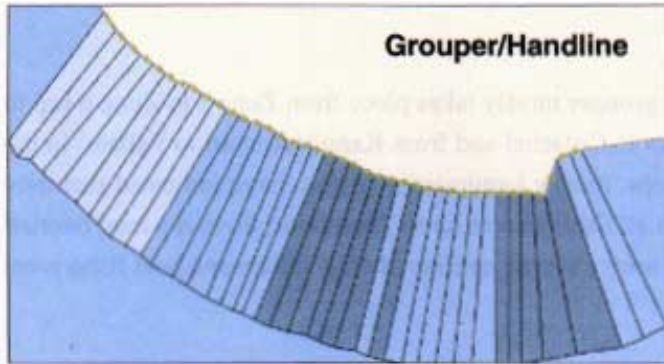


Figure 16a. Fishing areas of kattumaram, vallam and boat fishermen aggregated, fishing for grouper using handline.

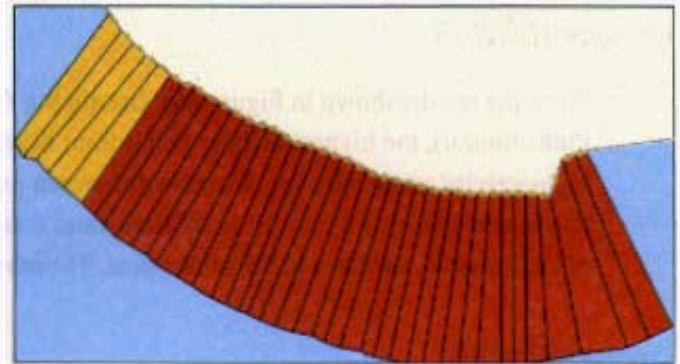


Figure 16b. Overlap in fishing areas of kattumaram, va/lam and boat fishermen, fishing for grouper with handline.

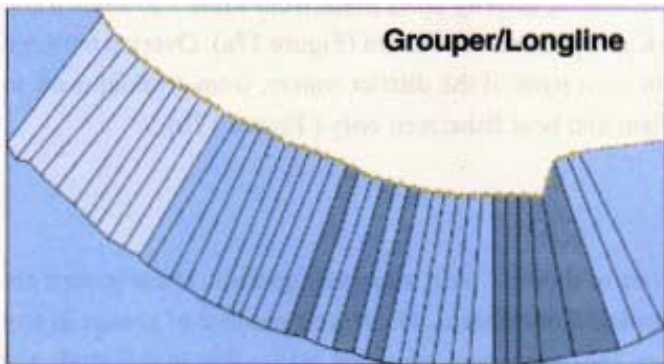


Figure 17a. Fishing areas of kattumaram, vallam and boat fishermen aggregated, fishing for grouper using longline.

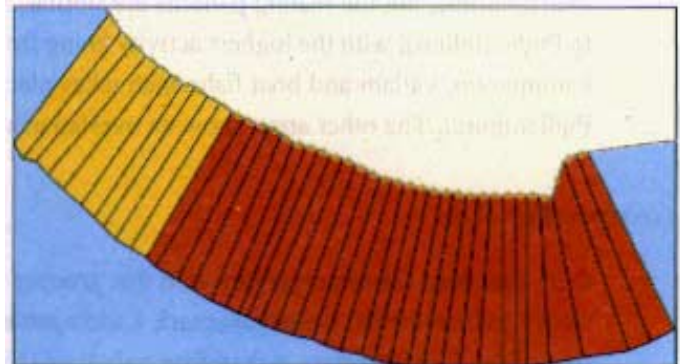


Figure 17b. Overlap in fishing areas of kattumaram, va/lam and boat fishermen, fishing for grouper with longline.

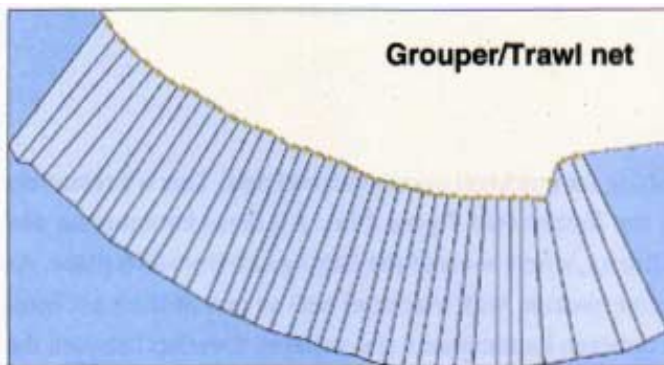


Figure 18a. Fishing areas of kattumaram, vallam and boat fishermen aggregated, fishing for grouper using trawl net.



Figure 18b. Overlap in fishing areas of kattumaram, vallam and boat fishermen, fishing for grouper with trawl net.

groups coming from the western villages, the highest concentration of groups at sea is found in the eastern part, from Kanniyakumari to Muttom. Overlap between kattumarams, vallams and boats takes place from Kanniyakumari up to Kodimunai; in the remaining areas the overlap does not include kattumarams (Figure 20b).

Rock cod/Land/inc

A similar situation exists in the use of handline. There are more kattumaram groups fishing for rock cod with handline than with longline, but fewer val lam groups. The distribution of 'rockcod-handline-fishermen groups' is greater throughout the district. As in the previous case the highest concentration of fishermen groups at sea is found in the eastern part of Kanniyakumari (see Figure 21a), in which there is also overlap in fishing activity of kattumarams, vatlams and boats (see Figure 21b).

Squid-Cuttlefish/Handline

Handlining for squids/cuttlefish is done mainly by kattumarams: 63% of the 24 kattumaram groups in the district handline for squids. The groups are mainly from the central and eastern parts of the district. There are 10 vallam groups that fish for squids, which are mainly situated in the central part of the district. The two boat groups are Vaniakudy and Kanniyakumari. Fishing takes place throughout the district, with the highest fishing activity being from Muttom to Colachel (see Figure 22a). Overlap between kattumaram, vallam and boat fishermen occurs throughout the entire district (Figure 22b).

Squid-Cuttlefish/Trawl net

The use of trawl nets to catch squids and cuttlefish is restricted to the boat groups. The groups in Chinnamuttom, Kanniyakumari and Kurumbanai indicated that squids and cuttlefish are one of their six most important species. These three groups fish throughout the district (Figure 23a). As with trawling for grouper, there is no overlap with kattumaram or vallam groups (see Figure 23b).

Seerfish/Hand/inc

Seer fish are caught mostly with handlines. Around 50 per cent of both kattumaram and vallam groups indicated that they hand line for seer fish, one of their six most important species. The two boat groups are from Kodimunai and Kaddiapattanam. Though fishing is done throughout the district, the highest activity occurs between Muttom and Puthenthurai, near Enayam (see Figure 24a) where in some areas 13 groups operate during the same period. In Arokiapuram and Chinnamuttom, only kattumarams handline for seer fish. In other parts of the district, both kattumarams and vallams use this gear to target seer fish. The two boat groups fish from Rajakamangalam Thurai to Colachel. In these areas, their operations overlap with those of kattumarams and vallams (see Figure 24b).

Seerfish/Drift net

The second-most popular gear for capture of seer fish is drift net. The use of drift net to fish for seer fishes is done mostly by vatlams, while handlines are used mostly by kattumarams. There are 11 vatlam groups, nine kattumaram groups and one boat group that said they use driftnets to target seer fishes. The boat group is from Chinnathurai. Though seer fishes are fished throughout the district, the highest fishing activity takes place from Kanniyakumari to Puthenthurai, near Enayam (see Figure 25a), where in many places 11 fishermen groups operate. Overlap between the three types of fishing groups is apparent throughout the district, except for Arokiapuram and Chinnamuttom where only kattumarams operate (see Figure 25b).

Number offishermen groups

Overlap between K, V and B

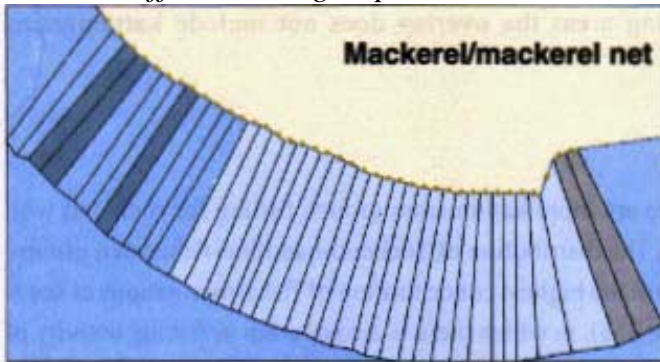


Figure 19a. Fishing areas ofkattumaram, vallam and boat fishermen aggregated, fishingfor mackerel using mackerel net.

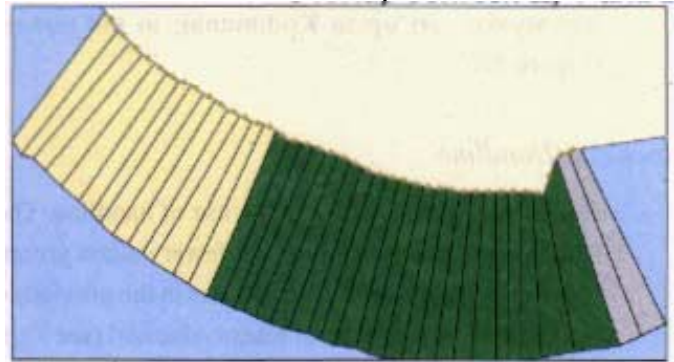


Figure 19b. Overlap infishing areas ofkattumaram, vallam and boatfishermen, fishing for mackerel with mackerel net.

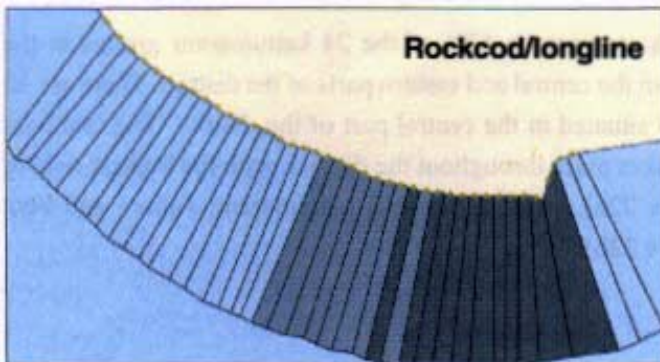


Figure 20a. Fishing areas ofkattumaram, vallam and boat fishermen aggregated, fishingfor rockcod using long/me.

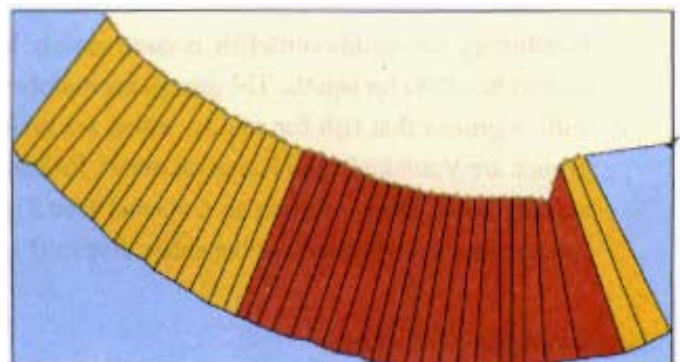


Figure 20b. Overlap infishing areas ofkattumaram, va/lam and boatfishermen, fishing for rockcod with long/me.

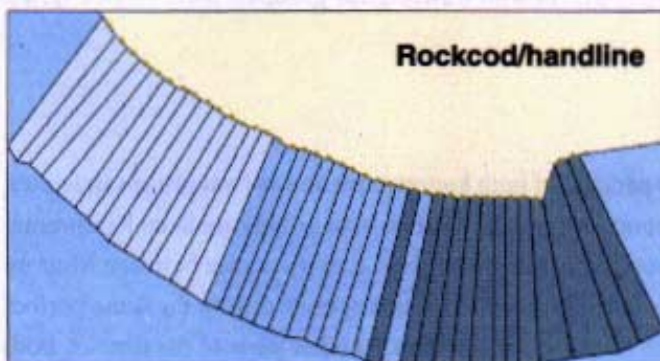


Figure 21a. Fishing areas ofkattumaram, vallam and boat fishermen aggregated, fishingfor rockcod using handline.

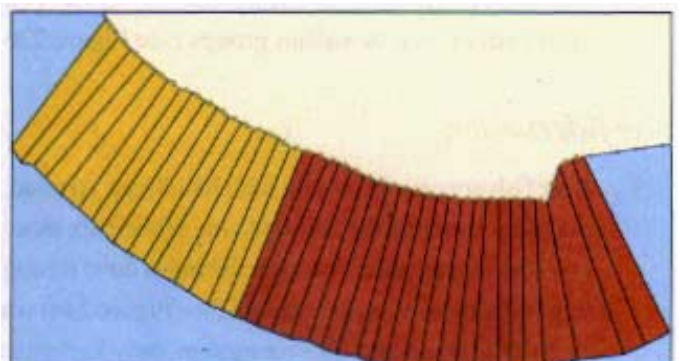


Figure 21b. Overlap infishing areas ofkattumaram, va/lam and boatfishermen, fishing for rockcod with handline.

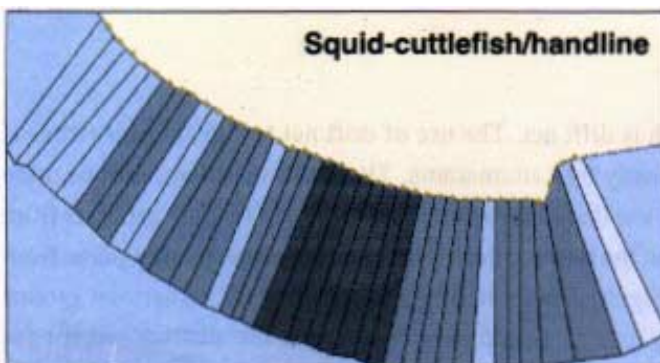


Figure 22a. Fishing areas ofkattumaram, vallam and boat fishermen aggregated, fishingfor squid/cuttlefish using hand/me.



Figure 22b. Overlap infishing areas ofkattumaram, vallam and boatfishermen, fishing for squid/cuttlefish with handline.

Number of fishermen groups

Overlap between K V and B

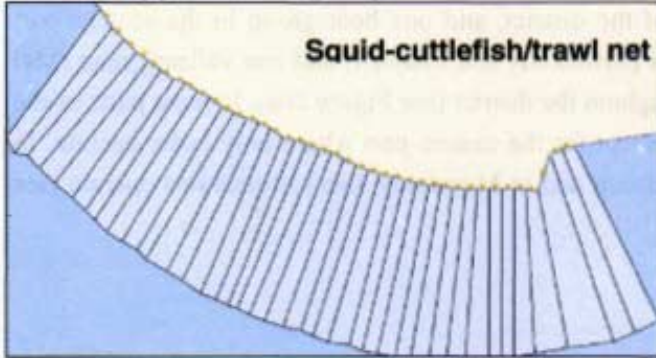


Figure 23a. Fishing areas of kattumaram, vallam and boat fishermen aggregated, fishing for squid/cuttlefish using trawl net.



Figure 23b. Overlap in fishing areas of kattumaram, vallam and boat fishermen, fishing for squid/cuttlefish using trawl net.

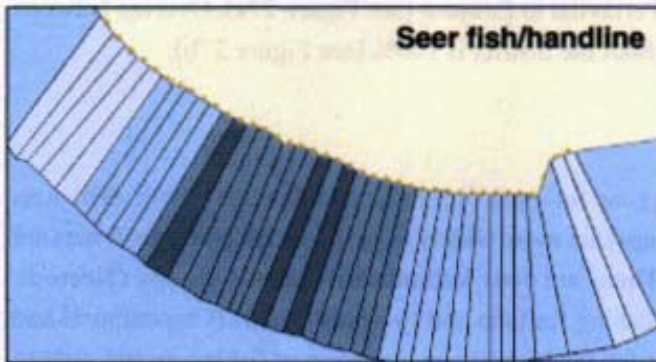


Figure 24a. Fishing areas of kattumaram, vallam and boat fishermen aggregated, fishing for seer fish using handline.

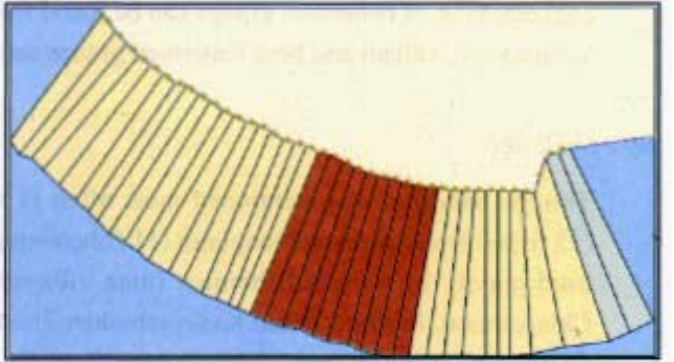


Figure 24b. Overlap in fishing areas of kattumaram, vallam and boat fishermen, fishing for seer fish using handline.

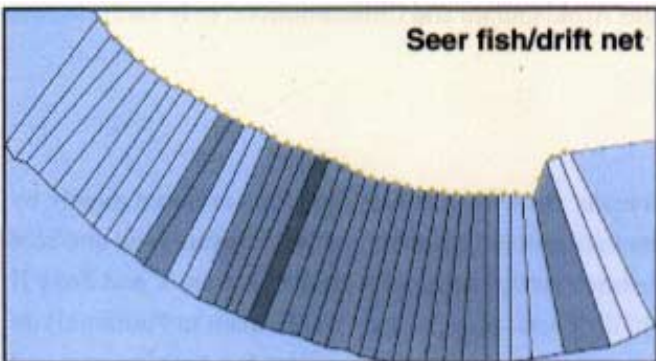


Figure 25a. Fishing areas of kattumaram, vallam and boat fishermen aggregated, fishing for seer fish using drift net.



Figure 25b. Overlap in fishing areas of kattumaram, vallam and boat fishermen, fishing for seer fish using drift net.

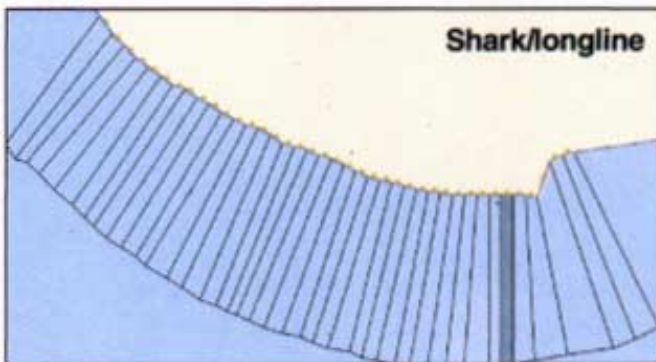


Figure 26a. Fishing areas of kattumaram, vallam and boat fishermen aggregated, fishing for shark using longline.

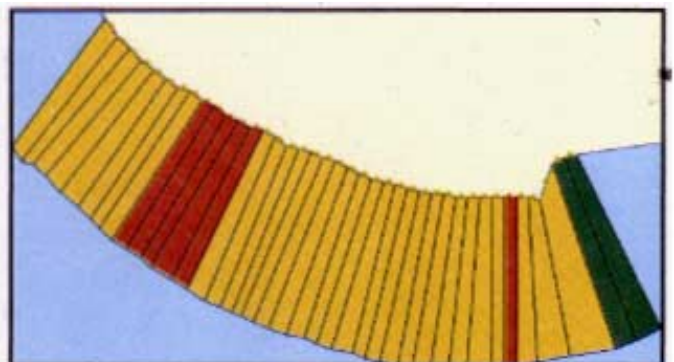


Figure 26b. Overlap in fishing areas of kattumaram, vallam and boat fishermen, fishing for shark using longline.

Shark/Longline

Longline is the gear used most commonly for sharks, and is used mainly by boat fishermen. There are six boat groups that longline for shark in the western part of the district, and one boat group in the eastern part (Kanniyakumari). In addition, two kattumaram groups (Manakudy and Enayam) and one vallam group (Mel Midalam) longline for shark. Fishing takes place throughout the district (see Figure 26a). In most parts of the district, overlap occurs between vallams and boats, except for the eastern part where only boats operate. In small areas such as from Thengapattanam to Mel Midalam and in Manakudy also kattumarams operate (see Figure 26b).

Shrimp/Trammel net

Trammel net is the gear used most often to catch shrimp. Around 80% of both the kattumaram groups (=30 villages) and vallam groups (=19 villages) use trammel nets to catch shrimp. Of the boat groups, only 30% (=4 villages) use trammel nets. Most groups fish for shrimp throughout the district, though the highest concentration of fishermen groups can be found from Periyavilai to Enayam (see Figure 27a). Overlap between kattumaram, vallam and boat fishermen groups throughout the district is 100% (see Figure 27b).

Tuna/Drift net

Though handline was mentioned most often as the gear for tuna (16 fishermen groups), both drift nets (15 fishermen groups) and longlines (11 fishermen groups) are more widely used in spatial terms. Drift nets are used mainly by vallam fishermen (nine villages). There are four kattumaram fishing groups (Neerodi, Chinnathurai, Pozhikarai and Kesavanputhen Thurai) fishing for tuna and two boat groups (Chinnathurai and Thoothoor). Though fishing is done throughout the district, the highest concentration of fishing groups fishing for tuna with drift nets is from Kanniyakumari to Muttom (see Figure 28a). In most of the district, overlap occurs between all three groups, except for the fishing areas from Simon Colony to Vallavillai, where there is overlap between boats and vallams. In front of the villages Arokiapuram and Chinnamuttom, only kattumarams and vallams fish for tuna (see Figure 28b).

Tuna/Longline

Longline is used less extensively than drift net to catch tunas. As with drift nets, longlines are used mostly by vallams (eight villages). In addition, there are two kattumaram groups (Ramanthurai and Enayam) and one boat group (Chinnathurai). The highest concentration of fishermen groups fishing for tuna is in Zone V and Zone II (see Figure 29a). Overlap is not as much as in the case of drift nets: only in Zone V (Midalam to Poothurai) do all three fishermen groups overlap. The other areas have vallam and boat groups, except for Arokiapuram and Chinnamuttom where only vallam fishermen longline for tunas (see Figure 29b).

Legends

0
1-4
5-8
9-12
13-16
> 16



Overlap between K, V and B

Number of fisherinen gmups

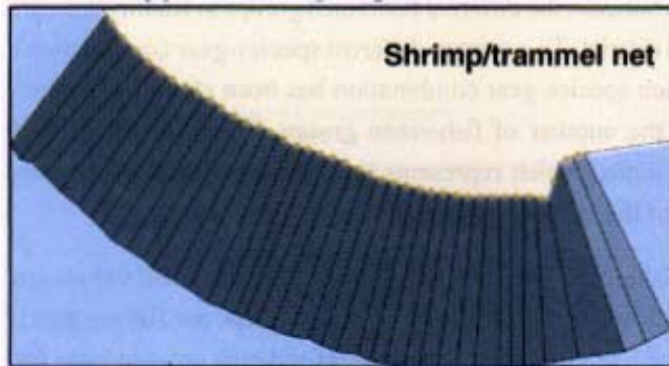


Figure 27a. Fishing areas of kattumaram, vallam and boat fishermen aggregated, fishing for shrimp using trammel net.

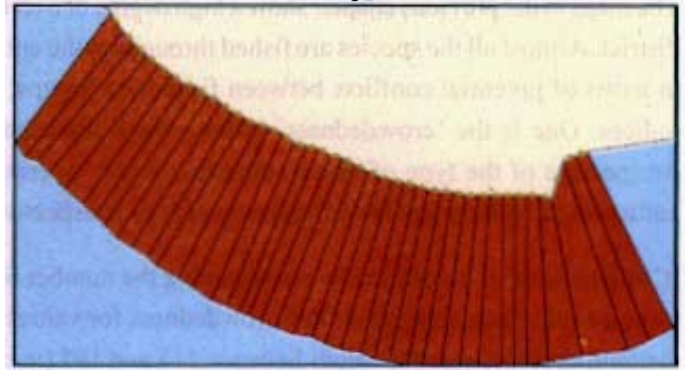


Figure 27b. Overlap in fishing areas of kattumaram, vallam and boat fishermen, fishing for shrimp using trammel net.

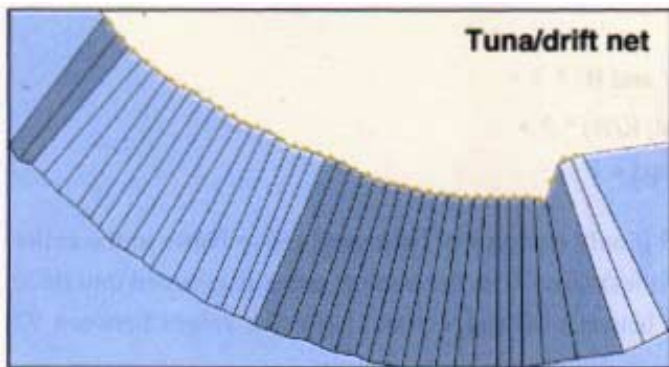


Figure 28a. Fishing areas of kattumaram, vallam and boat fishermen aggregated, fishing for tuna using drift net.

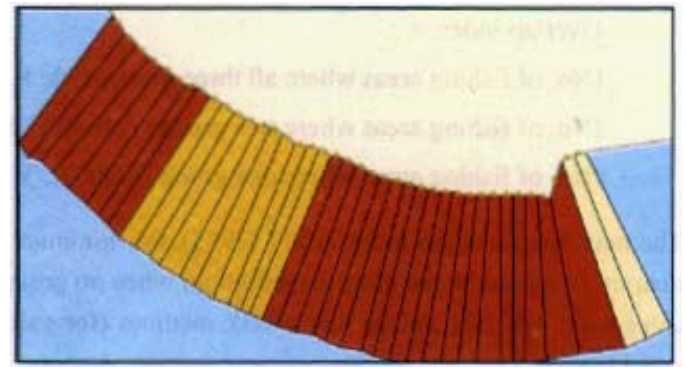


Figure 28b. Overlap in fishing areas of kattumaram, vallam and boat fishermen, fishing for tuna using drift net.

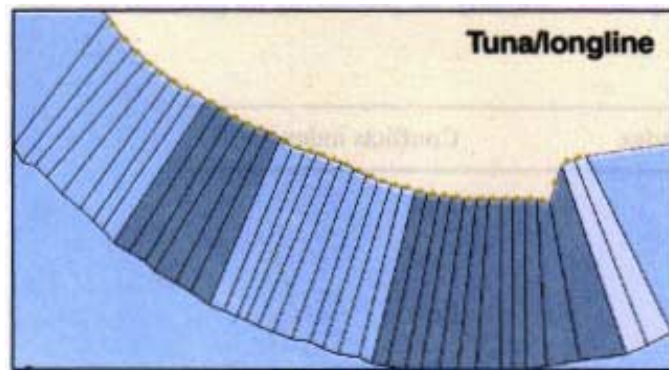


Figure 29a. Fishing areas of kattumaram, vallam and boat fishermen aggregated, fishing for tuna using longline.

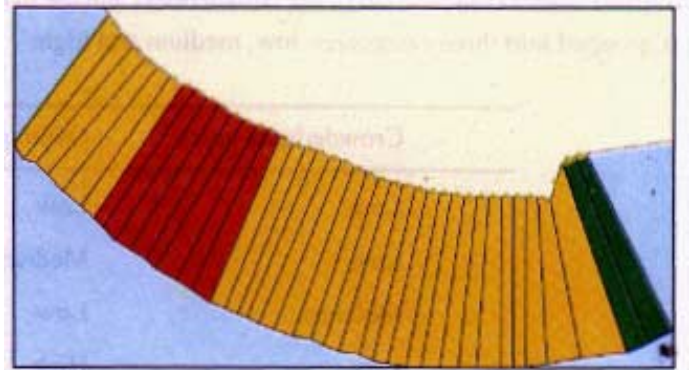


Figure 29b. Overlap in fishing areas of kattumaram, vallam and boat fishermen, fishing for tuna using longline.

4. DISCUSSION

The final chapter of this report presents an “index” about the potential conflicts between fishermen groups in the district. It also provides more details about the lifestyles of fishermen, their views and perceptions.

4.1 Conflicts index

The maps in the previous chapter show a high degree of overlap between the different fishermen groups in Kanniyakumari district. Almost all the species are fished throughout the entire district. To compare different species-gear combinations in terms of potential conflicts between fishermen groups, each species-gear combination has been classified by two indices. One is the ‘crowdedness’ index, which represents the number of fishermen groups fishing in the district irrespective of the type of vessel, the other is the ‘overlap’ index, which represents the degree of overlap between kattumaram, vallam and boat fishermen groups irrespective of the number of groups.

‘Crowdedness’ is calculated by summarising the number of fishermen groups in the district. The calculated values are grouped into three categories: low crowdedness for values between 0 and 117 (max. of three groups per fishing area), medium crowdedness for values between 118 and 195 (max. of five groups per fishing area) and high crowdedness for values above 195.

‘Overlap’ is calculated by the formula:

Overlap index =

(No. of fishing areas where all three groups fish: K, V and B) * 3 +

(No. of fishing areas where two groups fish: K/V, B/V, K/B) * 2 +

(No. of fishing areas where one group fishes: K, V or B) * 1

The maximum overlap index is 117(39*3), the minimum 39 if only one type of fishermen group fishes in the entire district. (0 would be the absolute minimum when no group fishes). Similarly, the overlap index is grouped into three categories: low (for values below 65), medium (for values between 66 and 91) and high (for values between 92 and 117).

The probability of conflicts between the kattumaram, vallam and boat fishermen groups, the ‘conflicts’ index, can be derived from a combination of the crowdedness and the overlap index. Similarly, the probability for potential conflicts is grouped into three categories: low, medium and high:

Crowdedness index	Overlap index	Conflicts index
Low	Low	Low
Low	Medium	Low
Medium	Low	Low
Low	High	Medium
Medium	Medium	Medium
High	Low	Medium
Medium	High	High
High	Medium	High
High	High	High

Using the information of the fishing patterns for a selected number of species and their associated gear, the three indices are calculated and shown below in Table 8. The conflict probability is high for all species if we do not take into account any gear in particular. If we do look at the contribution of different gears to the probability of conflicts in the district, we see that some species-gear combinations have a low probability, others a high probability. For example, fishing for shrimps using trammel nets is done by many fishermen groups (crowdedness); there is a high overlap of kattumaram, vallam and boat groups. The probability for conflicts is therefore high. The same scenario is true for species such as tunas and seer fish that are captured with drift net. Many of the other species have a high conflicts index for the use of lines such as handline and longline. The use of trawl nets in this respect is special, because it is used only by the mechanised boat sector. The overlap index is by definition low, resulting in a low conflicts index. The probability for conflicts with the boat sector is caused not by the use of the same gear by different fishermen groups, but from the indirect effect of trawl fishing on other fishermen groups, caused by the impact on the fish resource.

Table 8. Crowdedness index, overlap index and the calculated probability for potential conflicts (conflicts index) for a selected number of species and their associated gear

		Crowdedness index	Overlap index	Conflicts index
Crouper*		High	High	High
With gear:	Drift net	Low	Low	Low
	Trawl net	Low	Low	Low
	Longline	High	High	High
	Handline	High	High	High
Mackerel*		High	Medium	High
With gear:	Longline	Low	Low	Low
	Handline	Low	Low	Low
	Mackerel net	Medium	Low	Low
Rockcod*		High	High	High
With gear:	Mackerel net	Low	Low	Low
	Trawl net	Low	Low	Low
	Drift net	Low	Low	Low
	Handline	High	High	High
	Longline	High	High	High
Squid+Cuttlefish*		High	High	High
With gear:	Longline	Low	Low	Low
	Trawl net	Low	Low	Low
	Handline	High	High	High
Seer fish*		High	High	High
With gear:	Longline	High	Medium	High
	Handline	High	Medium	High
	Drift net	High	High	High

Shark*		High	High	High
With gear:	Trawl net	Low	Low	Low
	Handline	Low	High	Medium
	Drift net	Low	Low	Low
	Longline	High	Medium	High
Shrimp*		High	High	High
With gear:	Handline	Low	Low	Low
	Trawl net	Low	Low	Low
	Trammel net	High	High	High
Tuna*		High	High	High
With gear:	Mackerel net	Medium	Low	Low
	Handline	High	High	High
	Longline	High	Medium	High
	Drift net	High	High	High

* in this row indices are given for the species, irrespective of gear.

4.2 Why conflicts?

The question of why conflicts occur is difficult to answer. They are there. During my field work, however, fishermen did not mention many incidents. An important issue raised very often is the presence of ships from other states or from foreign countries in their waters. They blame the decrease in their catches on these ships and even accuse these ships of cutting their nets and taking away the fishermen's catch. It isn't clear to me whether these incidents have actually taken place, or whether they are hearsay accounts passed on from person to person. Replies to questions like 'When did it happen?', 'Was it reported to the police?', are vague and ambiguous. The kattumaram fishermen from Kodimunai said they reported an incident to the police two months ago. It also seems that fishermen are not aware that ships from other states are allowed to fish at a distance of 12 nautical miles from the shore.

Some fishermen avoid problems. For example, fishermen from Pillaihope and Muttom indicated that nowadays they fish in Kerala only, because of ongoing quarrels with neighbouring villages.

Catches and effort

in general, conflicts are triggered by resource scarcity. In Kanniyakumari district, the size of the catch varies not merely between one year and another, but also during a single year. In general, the catches fishermen get during the June and July monsoons constitute about 30% of their yearly income. Catches are good in the monsoon, even though the fishermen can go out only three or four times a month because of the rough weather. Damages to the gears and the boats occur most often during those months. Kattumaram fishermen from Neerodi said that the sea is too rough for them to fish during the monsoon. Catches fall during the period November to February. Kattumaram fishermen from Muttom don't fish at all.

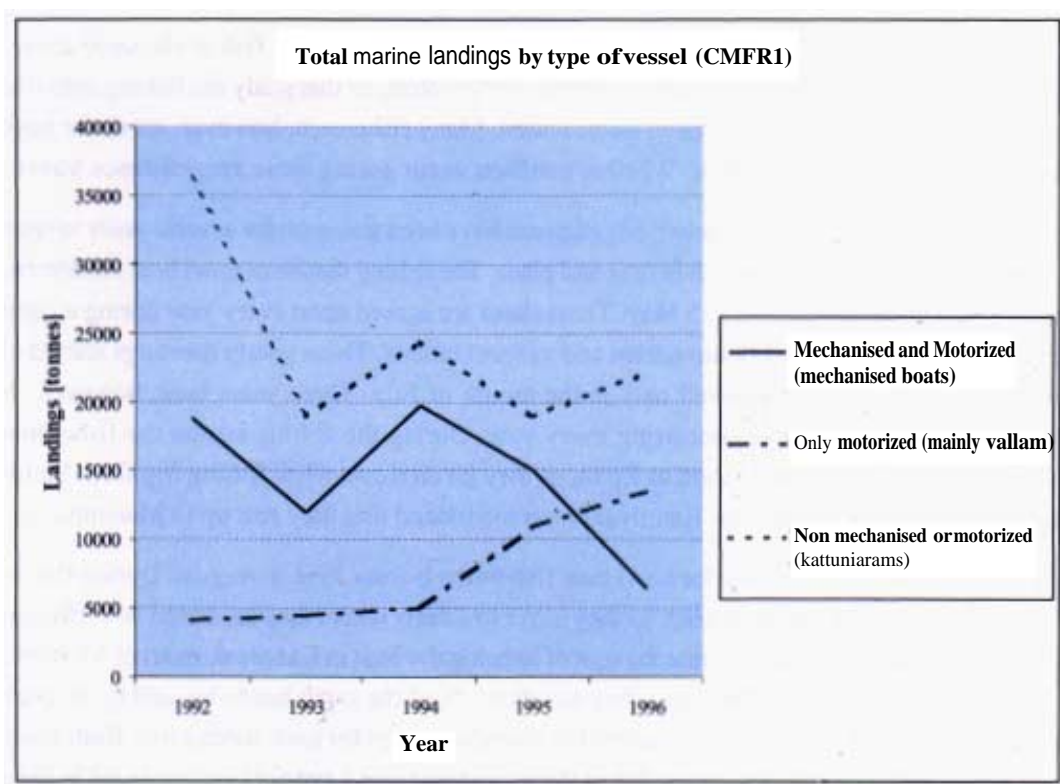
Compared to catches 10 years ago, catches in most villages have fallen. According to some fishermen, the catches of squid and shrimp have fallen dramatically from 500 kg/day to only 5 kg/day. Some reasons cited by the fishermen: (K= kattumaram, V= vallam and B= mechanised boat fishermen groups):

- The sea is too warm because of sparse rainfall, impeding the birth of lobsters (K-Chinnamuttom).
- More kattumarams now than before, so there's more fishing. (K-Chinnamuttom)
- A lot of marine pollution from factory waste (B-Chinnamuttom).
- The noise of kattumara engines scares away the fish (B-Kanniyakumari)
- Trawlers, foreign ships and ships from other states damage the bottom of the sea, and take away all the fingerlings as well. (K-Manakudy, K-Puthenthurai, K-Kesavanputhen Thurai, K-Periakadu, K-Rajakamangalam Thurai, K-Pillaithepe, K-V-Muttom, K-Chinnavilai, V-Arokiapuram).
- The operations of a mining company have eroded the land and polluted the sea (K-Chinnavilai).

Many fishermen are highly concerned about the impact of other ships on the fish stock. They are aware that it is harmful to the stock to fish away the fingerlings, and to damage the seabottom with the gear. One would therefore expect them to be open to the option of mesh size regulations to manage their fisheries.

Despite the fall in catches, the incomes of fishermen have not suffered dramatically over the past 10 years because prices have gone up. According to Muttom fishermen, the price of tiger shrimp has gone up from Rs. 25/kg to Rs. 1,200/kg. Boat fishermen from Kanniyakumari say that a good catch of Romea can be sold for prices up to Rs. 40,000.

Figure 22. Total marine landings in Kanniyakumari district by type of vessel.
Source: Central Marine Fisheries Research Institute (CMFRI)



Data on total landings in Kanniyakumari district during the last four years shows a decrease in the landings of mechanised boats and of kattumaram fishermen (see Figure 22). Only vallams show an increase from around 5,000 tonnes to almost 15,000 tonnes per year. Yet, the total landings from kattumarams (22,000 tonnes in 1996) are higher than those of boats and vallams. In this survey, all fishermen groups (kattumaram, vallam and boat) complained about falling catches. The complaints of the vallam fishermen, however, do not seem to be borne out by the landings data collected by CMFRI.

Most of the groups say that because of the lower catches, they spend more time at sea to obtain the same total catch. Other groups say exactly the opposite: because of the lower catches, they spend less time at sea, because they do not want to waste their time:

Less time at sea: K-Kanniyakumari, K-Periakadu, K-Kaddiapattanam,
K-Chinnavilai, K-Kodimunai, K-Kurumbanai, V-Chinnamuttom

Same amount of time at sea: K-Kil-Manakudy, K-Pailam

More time during the season,
less time during the off-season : K-Pozhikarai

Not all the fishermen say that their catches have fallen, compared to those 10 Years ago. The kattumaram fishermen from Kovalam record higher catches, but the time spent at sea has also increased. Also, the boat fishermen from Colachel have higher catches, even for the same amount of time spent at sea.

Most of the fishermen had no special remarks about changes in the species composition of their catches. However, the kattumaram fishermen of Periakadu say that they hardly catch tuna and seer fish anymore. The kattumaram fishermen of Pillaihope said that the following species of fish have disappeared (only Tamil names given): vellamural, vanaken, manakene and kudipu. The kattumaram fishermen from Perivilai complained about manakane and kudipu (only Tamil names given).

Fishing areas

Conflicts are also likely to occur when people from different villages fish in the same areas. It is well-known that the fishermen in Kanniyakumari district are very mobile. In this study the fishing activities which only take place in the district waters have been documented. Many fishermen, however, move far beyond Arokiapuram to the east or Neerodi to the west. Whether conflicts occur during these long-distance travels, is not clear.

In both Chinnamuttom and Colachel, negotiations have been going on for several years to restrict the operations of the mechanised boat sector both in time and place. The fishing season of trawl boat fishermen in Chinnamuttom starts 1 September and ends on 15 May. These dates are agreed upon every year during a committee meeting of both boat and country craft (kattumaram and vallam) unions. These yearly meetings started eight years ago. At that time fishing was not allowed only in the month of July. Three years later, however, the agreement was changed, with small changes occurring every year. During the fishing season the fishermen either start their fishing trips at 5.30 a.m and return at 8 p.m, or they go on a one-week fishing trip from Sunday night to Friday night. The boat fishermen from Kanniyakumari mentioned that they fish up to Manappad in the east.

In Colachel, the fishing season for trawl boat fishermen is from June to August. During the rest of the year they are not allowed to fish in the district, so they move to Kerala where they are based in Vizhinjam. Another reason for fishing outside the district is that the cost of keeping the boat in Kanniyakumari or Muttom is high, according to the boat fishermen from Muttom. They say that 5 % of the catch has to be paid to the parish in both places, and an extra sum of Rs. 1000 has to be paid in Kanniyakumari for each fishing trip. Both boat fishermen groups from Muttom and Pillaihope do not fish in the district and thus have not been included in the study. Other long-

distance travellers are the boat fishermen of the western villages. They go even up to the Gulf of Kutch in Gujarat.

The vallam and kattumaram fishermen also fish outside the district. Especially during the monsoon – when the sea in Kanniyakumari is too rough – they move to other places such as Kerala. If the sea is too rough for the vallam, the fishermen will hire a truck and transport the vessel by road. For example, kattumaram fishermen from Chinnamuttom fish up to Kutapuzhi, which is further east of Arokiapuram. In Vallavillai, the kattumaram fishermen go up to Vizhinjam towards the west. All vallam fishermen from Manakudy move to Kerala.

How far the fishermen travel out at sea has not been covered in this study. The absence of this information is a drawback in estimating the overlap of fishing activities between different groups of fishermen. It was believed that fishermen would not be able to provide reliable information about the distances they travel out at sea, because of the absence of landmarks. Further, boat fishermen are not allowed to fish in areas that are less than 25 fathoms in depth; they will therefore say that they fish only in areas more than 25 fathoms deep. In reality they might not. As for the distances fishermen travel out at sea, the boat fishermen from Kanniyakumari fish up to 80 km out at sea. Vallam fishermen from Arokiapuram say they go up to 45 km out at sea, but only to 10 km during the monsoon.

Vallam fishermen from Muttom indicate that the distances travelled out at sea have increased. For example, earlier they used to fish for cuttlefish at only a distance of 1 km from the shore; now they have to go 5 km out. Similarly, vallam fishermen from Chinnamuttom charge that they have to go longer distances because mechanised boats have overexploited all the fish close to the shore.

This study often found that the most valuable species are fished very close to the village. These species are called 'low yield-high income' species; they are not fished throughout the district. Examples are lobster and squid+cuttlefish. Examples of the second category of fishes, 'high yield-low income' species are sardine and anchovy, but the fishermen did not often mention either species.

Jobs and money

What about the living conditions of Kanniyakumari fisherfolk? When going around in Kanniyakumari district, one can observe that the land area is not well protected. Many activities are taking place – such as the mining and soaking of coconut husks in ditches along the shore. Anti-erosion measures are badly needed or need maintenance. In Paliam, the sea is now literally up to the houses of the fishermen, while the existing seawall is eroding fast. Fishermen from Chinnavilai are complaining that almost 500 m of land has been eroded over the last 50 years.

Some villages still look much more prosperous than others do. For example, in Kesavanputhen Thurai and Pozhikarai, many villagers are working in foreign countries such as the Gulf and often send money back to their families. This way the families do not have to depend on income that is generated from fishing alone. In some villages, fishing is the main job opportunity. Fishermen from Kodimunai said that they also work as labourers on ships. In Puthenthurai, fishermen said that even though young people study up to the 10th or 12th standard, they often go back to fishing. However, in Rajakamangalam Thurai, some youngsters indicated that they do not want to go into fishing, but would like to become taxi drivers or work in an office. Villagers from Chinnavilai would like to get more job opportunities from the company Indian Rare Earths.

Some fishermen were asked what they would do if they have a lot of money. A fisherman from Periyavilai answered that he would like to buy a new boat. Apparently, this fisherman wants to remain a fisherman; he believes that a solution to the problem of falling catches is to invest more in equipment. A fisherman in Chinnavilai said more or less the same thing when asked how he would spend a large sum of money. He added that he would also use the money to marry off his daughter and to buy some alcohol. The consumption of alcohol is a rather

alarming development in the district. Not only is a lot of money spent on alcohol that could be used to benefit the whole family, but it also causes conflicts within and outside the family. Alcohol consumption seems to be the highest between June and September when catches are high and the fishermen have more money than usual.

4.3 Limitations and recommendations

This study has a number of limitations because of its qualitative set-up. Catch data was missing because it was not collected. The fishing patterns of the Kanniyakumari fishermen need to be investigated in greater detail. It is possible to obtain more detailed information at higher cost. Let's discuss an example. In Bahrain, every fishing vessel is equipped with a Global Position System to record its position from satellites during fishing. The crew has to keep logbooks on the size and composition of its catches. Such a monitoring system might cost a lot of money, but the level of detail on catches and effort can provide vital information for fisheries management.

A further limitation of this study is that on the maps showing the number of fishermen groups fishing for selected species with certain gear, no distinction is made between kattumaram, vallam and boat fishermen groups. This is not correct, because

1. the impact on the fish resource of a mechanised boat is more than a kattumaram or a vallam, therefore
2. the fourteen boat groups that fish in the district have a much higher impact on the fish resource than represented in this study, but
3. it is also true that a very large number of kattumarams may have a higher impact on the fish resource than a small number of boats (e.g. in Puthenthurai there are 490 kattumarams and 28 boats).

The number of vessels cannot therefore be neglected. A conversion factor (e.g. 1 boat = x kattumarams) has to be used for a better comparison between kattumaram, vallam and boat fishermen activities.

Finally, this study has been focussing mainly on the distances that fishermen travel along the coast. In a future study of this kind, attempts should be made to include information on the second dimension, the distance fishermen travel away from the shore. The reason why the distance out at sea was not included in this study is that the answers from the fishermen did not seem to be correct-- distances seemed much longer than those actually travelled. Distances along the coast were easier to estimate because of the landmarks along the coast. In a further study, more information about the seaward dimension will provide a more detailed perspective of the fishing patterns of the Kanniyakumari fishermen.

5. CONCLUSIONS

- Definition: a fishermen group represents the kattumaram, vallam or mechanised boat fishermen in a certain village. There is a maximum of three fishermen groups per village. There are 38 kattumaram fishermen groups, 26 vallam fishermen groups and 14 boat fishermen groups in Kanniyakumari district.
- Of the fishermen groups, 57 out of 75 (=76%) mentioned shrimp as one of their six most important species, and 51 groups (=68%) mentioned squid/cuttlefish. Other frequently mentioned species were seer fish (42 groups/56%), tuna (31 groups/41%) and grouper (28 groups/37%).
- The kattumaram and vallam groups both mentioned shrimp most often as one of their six species, 33 out of 38 groups (87%) and 19 out of 26 groups (70%) respectively. From the boat groups, 8 out of 14 (57%) mentioned squid+cuttlefish, grouper and shark as one of their six species.
- From all the fishermen groups, 58 out of 75 (=77%) mentioned handline as one of their six most important gears and 55 groups (=73%) mentioned trammel nets (see Table 4). Other frequently mentioned gears were longline (45 groups/60%), sardine (34 groups/45%) and anchovy net (32 groups/42%).
- Kattumaram groups mentioned both handline and trammel net most often (31 out of 38 groups/82%) as one of their six gear. The vallam groups mentioned both trammel net and longline most often (20 out of 26 groups/77%). The boat groups mentioned mostly longline (9 out of 14 groups/64%).
- Of all the fishermen groups, shrimp/trammel net was mentioned by 53 out of 75 groups (=70%) and squid-cuttlefish/handline by 36 groups (=48%) as the species-gear combination used most often. Other frequent combinations are seer fish/handline (33 groups/44%) and seer fish/drift net (28%).
- For kattumaram and vallam fishermen the species-gear combination chosen most often is shrimp/trammel net (30 out of 38 groups/79% and 19 out of 26 groups/73% respectively). For boat fishermen it is shark/longline (7 out of 14 groups/50%).
- The two indices, crowdedness and overlap, indicate the probability of conflicts or the conflicts index between fishermen groups in Kanniyakumari district when fishing for certain species using certain gears.
- All the selected species grouper, mackerel, rock cod, seer fish, shark, shrimp, squid+cuttlefish and tuna show a high probability for conflicts among the fishermen groups.
- A high conflict probability is also calculated for the species-gear combinations: grouper (handline and longline), rock cod (handline and longline), squid+cuttlefish (handline), seer fish (handline, longline and drift net), shark (longline), shrimp (trammel net) and tuna (handline, longline and drift net).
- Compared to ten years ago, catches have gone down for most fishermen groups.
- Some fishermen say they spend more time at sea than they did 10 years ago, others spend less. The latter do not want to waste their time at sea.

During the monsoon it is hardly possible to fish in Kanniyakumari district, though catches are usually high.

6. ACKNOWLEDGEMENTS

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ANNEX 1

Village Factsheets

This annex presents factsheets about the fishing activity of each coastal village of Kanniyakumari District on the basis of results from fishing trials. The fishing ranges of many of the fishermen groups often extend further east of Arokiapuram and further west of Neerodi. This is however not mentioned in the factsheets, as only the fishing activity in Kanniyakumari district is relevant to this study. 'No off-season range' means that the species is only caught during one season, and that there is no lean season. 'All year season' means that the season for this species is the whole year through. 'To Kerala' indicates that the vessels of that fishermen groups move to Kerala and do not fish in Kanniyakumari district.

All the results below are also found in data tables in the Annex 2.

1.1 Arokiapuram

Village code : 1.1
 Population number (1986) : 1636
 No. of fishermen groups : 2 (kattumaram and vallam)
 No. of mechanised boats : 4

Kattumaram group 11

Species ranking	Shrimp	Seer tish (Seela)	Rockcod	Pomfret	Grouper	Sardine
Gear ranking	Sardine net	Drift net (set)	Longline	Trolling line	Handline	Monofil.net
	<i>Species 1</i>	<i>species</i>	<i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	Trammel net	Handline Longline Drift net	Handline	Monofil.net	Monofil.Net Handline	Sardine net
Season range from	Kovalam	Arokiapuram	Kovalam	KK	Arokiapuram	Arokiapuram
to	Arokiapuram	Arokiapuram	Arokiapuram	Arokiapuram	Arokiapuram	Arokiapuram
Off-season range from	Kovalam	Arokiapuram	Arokiapuram	KK	Arokiapuram	Arokiapuram
to	Arokiapuram	Arokiapuram	Arokiapuram	Arokiapuram		
No. of crafts		220				

Vallam group 11

Species ranking	Shrimp	Lobster	Squid-Cuttlefish	Grouper	Caranx	Trevally
Gear ranking	Trammel net	Sardine net	Drift net	Longline	Handline	Rot. set gill net
	<i>Species 1</i>	<i>Species 2</i>	<i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	Trammel net	Rot, set gill net	Handline	Longline Bot.set gill net	Handline Longline	Handline Longline
Season range from	Rajakamangalam	Arokiapuram	Manakudy	KK	Arokiapuram	Arokiapuram
to	Arokiapuram	Arokiapuram	Arokiapuram	Arokiapuram	Arokiapuram	Arokiapuram
Off-season range from	No off-season	All year season	No off-season	Arokiapuram	Arokiapuram	Arokiapuram
to	No off-season	All year season	No off season	Arokiapuram	Arokiapuram	Arokiapuram
No. of crafts	60					

Arokiapuram is the only village in the district that has fibreglass instead of plywood vallams.

1.2 Chinnamuttom

Village code : 1.2

Population number(1986) : 1083

No. of Fishermen groups : 3

Kattumaram group 12

Species ranking	Lobster	Shrimp	Squid-Cuttlefish	Seer fish	Seer fish (Seela)	Rock cod
Gear ranking	Sardine net Species 1	Lohster net Species 2	Rot. set gill net Species 3	Longline Species 4	Handline Species 5	Boat seine Species 6
Associated gear	Lobster net	Trammel net	Handline Scoop net	Handline Drift net Trolling line Longline	Trolling line	Handline Rot. set gill net Longline
Season range from	Chinnaniuttom	KK	Kovalam	KK	KK	KK
to	Chinnamuttom	Arokiapuram	Chinnmuttom	KK	KK	KK
Off-season range from	Chinnaniuttom	KK	Kovalam	KK	KK	KK
to	Chinnamuttom	Arokiapuram	Chinnamuttom	KK	KK	KK
No. of crafts	166					
Vallam group	12					
Species ranking	Shrimp	Lohster	Seertish (Seela)	Rock cod	Squid+Cuttlctish	
Gear ranking	Monofil.net Species /	Trammel net Species 2	Longline Species 3	Handline Species 4	Trolling line Species 5	Drift net Species 6
Associated gear	Trammel net Monofil.net	Monofil.Net Drift net	Drift net Trolling line	Monofil.net liandline	Handline Longline	
Season range from	Rajakamangalam	Chinnamuttom	Rajakamangalam	Rajamangalam	KK	
to	Arokiapuram	Chinnamuttom	Arokiapuram	Arokiapuram	Chinnamuttoin	
Off-season range from	Chinnamuttom	All year season	Rajamangalam	No off-season	KK	
to	Chinnmuttoni	All year season	Arokiapuram	No off-season	Chinnamuttom	
No. of crafts	15					
Boat group	12					
Species ranking	Squid+Cuttlefish	Rock cod	Grouper	Spotted Rock cod	Caranx	Barracuda (N)
Gear ranking	Trawl net Species 1	Longline Species 2	Handline Species 3	Species 4	Species 5	Species 6
Associated gear	Trawl net Longline	Trawl net Longline	Trawl net Longline	Trawl net Longline	Trawl net Longline	Trawl net Longline
Season range from	Colachel	Colachel	Colachel	Colachel	Colachel	Colachel
to	Arokiapuram	Arokiapuram	Arokiapuram	Arokiapuram	Arokiapuram	Arokiapuram
Off-season range from	No off-season	No off-season	No off season	No offseason	No off-season	No off-season
to	No otT-season	No off-season	No otT-season	No off-season	No off-season	No off-season
No. of crafts	24					

There are many more than 24 boats in Chinnamuttom harbour. Most of the boats are from Kanniyakumari Village

1.3 Kanniyakumari

Villagecode : 1.3
Population number (1986) : 6958
No. of Fishermen groups : 3

Kattumaram group 13

Species ranking	Shrimp	Squid+Cuttlefish	Seerfish	Shark	Sail fish	Caranx
Gear ranking	Monofil.net	Sardine net	Trolling line	Trammel net	Handline	Longline
Associated gear	<i>Species 1</i> Trammel net	<i>Species 2</i> Handline Trammel net	<i>Species 3</i> Handline Trolling line Longline	<i>Species 4</i> Trolling line	<i>Species 5</i> Handline	<i>Species 6</i> Handline Trolling line
Season range from	Pallam	Colachel	KK	KK	KK	KK
to	Arokiapuram	KK	KK	KK	KK	KK
Off-season range from	KK	Colachel	KK	KK	KK	KK
to	KK	KK	KK	KK	KK	KK
No. of crafts	644					

Vallam group 13

Species ranking	Shrimp	Seerfish (Seela)	Caranx	Grouper	Rock cod	
Gear ranking	Sardine net <i>Species 1</i>	Drift net <i>Species 2</i>	Handline <i>Species 3</i>	Mackerel net <i>Species 4</i>	Longline <i>Species 5</i>	Trolling line <i>Species 6</i>
Associated gear	Trammel net Monofil.net	Handline inc Drift net Trolling line	Handline net Monofil.net Longline	Handline inc Monofil-Net Longline Drift.net	Handline inc Monofilnet Drift net	
Season range from	Manakudy	Muttom	Muttom	Manakudy	Muttom	
to	Arokiapuram	Arokiapuram	Arokiapuram	Arokiapuram	Arokiapuram	
Off-season range from	KK	Muttom	Muttom	Manakudy	Muttom	
to	KK	Arokiapuram	Arokiapuram	Arokiapuram	Arokiapuram	
No. of crafts	33					

Boat group 13

Species ranking	Shrimp	Squid+Cuttlefish	Shark	Grouper	Rock cod	Travelly
Gear ranking	Trawl net <i>Species 1</i>	Longline <i>Species 2</i>	Handline <i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	Trawl net	Trawl net	Trawl net Handline Longline	Trawl net Handline Longline	Trawl net Handline Longline	Trawl net Handline Longline
Season range from	Muttom	Muttom	Muttom	Muttom	Muttom	Muttom
to	Arokiapuram	Arokiapuram	Arokiapuram	Arokiapuram	Arokiapuram	Arokiapuram
Off-season range from	Muttom	No off-season	Muttom	All year season	All year season	All year season
to	Arokiapuram	No off-season	Arokiapuram	All year season	All year season	All year season
No. of crafts	115					

The mechanised boat fishermen from Kanniyakumari also have their boats at Chinnamuttom harbour.

1.4 Kovalam

Village code	:	1.4
Population number(1986)	:	3016
No. of Fishermen groups	:	1 (kattumaram)
No. of vallams	:	
No. of mechanised boats	:	none

Kattumaram group 14

Species ranking	Shrimp	Squid+Cuttlefish	Seer fish	Grouper	Anchovy	Sardine
Gear ranking	Sardine net	Anchovy icy	Monofil.net	Trammel net	Trolling line	Handline
	<i>Species 1</i>	<i>Species 2</i>	<i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	Trammel net	Handline	Handline Trolling line	Monofil.net Trolling line	Anchovy net	Sardine net
Season range from	Manakudy	Kovalam	Pallam	Pallam	Manakudy	Kovalam
to	Arokiapuram	Kovalam	Arokiapuram	Arokiapuram	Arokiapuram	Kovalam
Off-season range from	No oil-season	Kovalam	Pallam	All year season	Kovalam	All year season
to	No ofT-season	Kovalam	Arokiapuram	All year season	Kovalam	All year season
No of crafts	394					

Though squid and cuttlefish is grouped into one category, the kattumaram fishermen catch mostly squid

1.5 Kil-Manakudy

Village code	1.5
Population number (1986)	1617
No. of Fishermen groups	1 (kattumaram)
No. of vallams	8
No. of mechanised boats	3

Kattumaram group 15

Species ranking	Shrimp	Squid+Cuttlefish	Butterfish	Trevally	Grouper	Sardine
Gear ranking	Handline	Handline	Rot. set gill net	Trammel net	Sardine net	Anchovy net
	<i>Species 1</i>	<i>Species 2</i>	<i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	Trammel net	Handline Disco fish	Rot. set gill net	Handline Bot. set gill net	Handline Bot.set gill net Handline	Sardine net
Season range from	Manakudy	Manakudy	Manakudy	Manakudy	Kil-Manakudy	Kil-Manakudy
to	Kil-Manakudy	Kil-Manakudy	Kil-Manakudy	Kil-Manakudy	KK	KK
Off-season range from	Manakudy	Manakudy	Manakudy	No off-season	Kil-Manakudy	Kil-Manakudy
to	Kil-Manakudy	Kil-Manakudy	Kil-Manakudy	No off-season	KK	KK
No. of crafts	112					

1.6 Manakudy

Village code	3.6
Population number (1986)	3800
No. of Fishermen groups	2 (kattumaram and vallam)
No. of mechanised boats	5

Kattumaram group 16

Species ranking	Shrimp	Squid-Cuttlefish	Seerfish	Shark	Travally	Anchovy
Gear ranking	Longline <i>Species 1</i>	Trammel net <i>Species 2</i>	Monofil. Net <i>Species 3</i>	Anchovy net <i>Species 4</i>	Handline <i>Species 5</i>	<i>Species 6</i>
Associated gear	Trammel net	Handline	Handline	Longline	Handline Monofil-net	Anchovy net
Season range from	Colachel	Manakudy	Manakudy	Manakudy	Manakudy	Manakudy
to	Arokiapuram	Arokiapuram	Manakudy	Manakudy	Manakudy	Manakudy
Off-season range	Colachel	Colachel	Manakudy	All year season	Manakudy	Manakudy
to	Arokiapuram	Arokiapuram	Manakudy	All year season	Manakudy	Manakudy
No. of crafts	473					

Vallam group 16

Species ranking	Seer fish	Shrimp	Squid+Cuttlefish	Grouper	Trevally	Tuna
Gear ranking	Longline <i>Species 1</i>	Handline <i>Species 2</i>	Trammel net <i>Species 3</i>	Drift net <i>Species 4</i>	Shark line <i>Species 5</i>	<i>Species 6</i>
Associated gear	Long line Handline Drift net	Trammel net	Handline	Handline Longline Drift net	Hand line Longline Drift net	Longline Handline Monofil.net Drift net
Season range from	Muttom	Rajakamgalam	Manakudy	Muttom	Muttom	Muttom
to	KK	KK	Manakudy	Arokiapuram	KK	KK
Off-season range from	Muttom	No off-season	To Kerala	Muttom	All year season	to Kerala
to	KK	No off-season		Arokiapuram	All year season	
No. of crafts	25					

2.1 Pallam

Village code	21
Population number (1986)	3099
No. of Fishermen groups	2 (kattumaram)
No. of vallams	: 23 (fishermen gave other information)
No. of mechanised boats	7

Kattumaram group 21

Species ranking	Shrimp	Seer fish	Caranix	Leather jacket	Squid-Cuttlefish	Grouper
Gear ranking	Anchovy net <i>Species 1</i>	Longline <i>Species 2</i>	Handline <i>Species 3</i>	Monofil.net <i>Species 4</i>	Drill net <i>Species 5</i>	Bottom set gill net <i>Species 6</i>

Associated gear	Trammel net	Handline	Handline	Handline	Handline	Handline Long line Bot.set gill net
Season range from	Pallam	Pallam	Pallam	Pallam	Pallam	Pallam
to	Pal lam	Pallam	Pallam	Pal lam	Pallam	Pallam
Off-season range from	Pallam	Pallam	Pallam	Pallam	Pallam	Pallam
to	Pallam	Pallam	Pallam	Pallam	Pallam	Pallam
No. of crafts	145					

2.2 Puthenthurai

Village code : 22
Populationnumber(1986) : 1036
No. of Fishermen groups : 1 (kattumaram)
No. of vallams none
No. of mechanised boats :

Kattumaram group 22

Species ranking	Sect fish (Seela)	Caranx	Half beak	Vella	Tuna	Threadlin bream
Gear ranking	Handline	Disco				
	<i>Species 1</i>	<i>Species 2</i>	<i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	liandline	Handline	Handline	Handline	Handline	Handline
Season range from	Periakadu	Periakadu	Periakadu	Periakadu	Periakadu	Periakadu
to	Manakudy	Manakudy	Mandkudy	Manakudy	Manakudy	Puthenthurai
Off-season range from	Periakadu	Periakadu	Periakadu	Periakadu	All year season	Periakadu
to	Menakudy	Manakudy	Manakudy	Manakudy	All year season	Puthenthurai
No. of crafts	13					

2.3 Kesavanputhen Thurai

Village code : 23
Population number(1986) : 1376
No. of Fishermen groups : 1 (kattumaram)
No. of vallams : 7
No. of mechanised boats none

Kattumaram group 23

Species ranking	Shrimp	Lobster	Squid+Cuttlefish	Seer fish	Tuna	
Gear ranking	Sardine net	Monofil.Net	Drift net	Trammel net	Anchovy net	Bot set gill net
	<i>Species 1</i>	<i>Species 2</i>	<i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	Monofil.net	Botset gill	Monofil.Net	Drift net	Drift net	
	Trammel net	net	Handline			

Season range from	Colachel	Kesavanputhen T.	Kesavaputhan T.	Colachel	Colachel
to	KK	Kesavaputhen T.	Keasvaputhen T.	Arokiapurani	Arokiapuram
Off-season range from	Raikamangalam	Kesavaputhe T.	No off-season	Colachel	Colachel
to	Kesavaputhen T.	Kesavenputhen T.	No off-season	Arokiapurani	Arokiapuram
No. of crafts	76				

2.4 Pozhikarai

Village code	: 2.4
Population number(1986)	: 1141
No. of Fishermen groups	: 1 (kattumaram)
No. of vallams	: 14
No. of mechanised boats	: none

Kattumaram group 24

Species ranking	Lobster	Shrimp	Tuna	Seer fish	Anchovy	Sardine
Gear ranking	Anchovy net	Sardine net	Drift net	Monofil.net	Trammel net	Bot. set gill net
Associated gear	Speck's / F3ot. set gill net	Species 2 Trammel net	Species 3 Drift net	Species 4 Drift net	Species 5 Anchovy net	Species 6 Sardine net Anchovy net
Season range from	Periakadu	Periakadu	Colachel	Colachel	Pozhikarai	Rajaka- mangalam
to	Puthenthurai	Puthenthurai	KK	KK	Pozhikarai	Kovalam
Off-season range from	Periakadu	Periakadu	No off-season	Colachel	Rajakamaiigalam	Rajaka- mangalam
to	Puthenthurai	Puthenthurai	No off-season	KK	Periakadu	Kovalam
No of crafts	7					

2.5 Periakadu

Village code	2.5
Population number(1986)	: 728
No. of Fishermen groups	: 1 (kattumaram)
No. of vallams	: 1
No. of mechanised boats	none

Kattumaram group 25

Species ranking	Shrimp	Squid+Cuttlefish	Seer fish	Sardine	Anchovy	Silver belly
Gear ranking	Monofil.net Species 1	Boat seine Species 2	Anchovy net Species 3	Trammel net Species 4	Longline Species 5	Handline Species 6
Associated gear	Trammel net	Handline	Handline	Sardine net	Anchovy net Boat seine	Beach seine Boat seine

Season range from	Rajakamangalani	Rajakamangalam	Periakadu	Pillaitope	Pillaithope	Periakadu
to	Pozhikarai	Pozhikaral	Periakadu	Kovalam	Kovalam	Periakadu
Off-season range from	Periakadu	Periakadu	No off-season	Pillaithope	Pitlathope	Periakadu
to	Periakadu	Periakadu	No off-season	Kovalam	Kovalam	Periakadu
No. of crafts	8					

2.6 Rajakamangalam Thu rai

Village code	26
Population number(1986)	3473
No. of Fishermen groups	: 1 (kattumaram)
No. of vallams	3
No. of mechanised boats	

Kattumaram group 26

Species ranking	Shrimp	Squid-Cuttlefish	Seer fish (Seela)	Whitefish	Trevally	Anchovy
Gear ranking	Rope net <i>Species 1</i>	MonofilNet <i>Species 2</i>	Anchovy net <i>sepcies 3</i>	Sardine net <i>Species 4</i>	Boat seine <i>Species 5</i>	Handline <i>Species 6</i>
Associated gear	Rope net	Handline	Handline Rope net	Boat seine Rope net	Boat seine Monofil.net	Anchovy net
Season range from	Pillaithope	Rajakamagalam	Rajamangalam	Pitlathope	Pillaithope	Pillaithope
to	Pozhikarai	Periakadu	Periakadu	Periakadu	Pozhikarai	Pozhikarai
Off-season range from	Rajakamagalam	Rajakamangalam	Rajakamagalam	Rajakamagalam	Pillaithope	Rajaka- mamangi aiii
to	Rajakaingalam	Perakkadu	Periakadu	Poihikarai	Pozhikarai	Rajaka- mangalam
No. of crafts	62					

3.1 Pillaithope

For convenience Azhgical, Pillaithope and Melathurai have been grouped together

Villagecode	: 3.1
Population number(1986)	: 2885
No. of Fishermen groups	: 1 (kattumaram)
No. of vallams	: 3
No. of mechanised boats	: 16 (the boat fishermen indicated they do not fish in KK district)

Kattumaram group 31

Species ranking	Shrimp	Seer lish	Ribbon lish	Sardine	Anchovy	Silver belly
Gear ranking	Anchovy net <i>Species 1</i>	Sardine net <i>Species 2</i>	Trammel net <i>species 3</i>	Monofil.net <i>Species 4</i>	oat seine <i>Species 5</i>	Handline <i>Species 6</i>

Associated gear	Trammel net	Handline	Boat seine	Sardine	Anchovy net	Boach seine
Season range from	Puthor	Puthenthurai (2)	Puthoor	Kaddiapattanam	Kaddiapattanam	Pillaitheope
to	Rajakamangalam	KK	Periakadu	Rajakamangalam	Rajakamangalam	Pillaitheope
Off-season range from	No oil-season	Puthenihurai (2)	Puthoor	Kaddiapattanam	Kaddiapattanam	Pillaitheope
to	No off-season	KK	Periakadu	Rajakamangalam	Rajakamangalam	Pillaitheope
No. of crafts	268					

3.2 Muttom

Village code	: 3.2
Population number(1986)	1888
No. of Fishermen groups	: 2 (kattumaram and vallam)
No. of mechanised boats	: 40 (the boat fishermen indicated they do not fish in KK district)

Kattumaram group 32

Species ranking	Lobster	Shrimp	Seer tish	Squid-cuttlefish	Grouper	Trevally.
Gear ranking	Handline <i>Species 1</i>	Trammel net <i>Species 2</i>	Longline <i>species 3</i>	Anchovy net <i>Species 4</i>	Monofil net. <i>Species 5</i>	<i>Species 6</i>
Associated gear	Bot. set gill net	Trammel net	Handline Longline Trolling line	Trammel net Uandline	Longline Longline Bot. set gill net Monofil.net	Handline Monofil.Net
Season range from	Muttom	Puihoor	Puthoor	Puihoor	Kadiapattanam	Kadia- pattanam
to	Muttom	Rajakamangalam	Rajakamangalam	Rajakamangalam	Muttom	Muttom
Off-season range from	Muttom	Muttom	Muttom	Muttom	Kaddiapattanam	Kaddia- pattanam
to	Muttom	Muttom		Muttom	Muttom	Muttom
No. of crafts	673					

VaHam group 32

Species ranking	Shrimp	Lobster	Seertish	Squid+Cuttlefish	Rock cod	
Gear ranking	Drift net <i>Species 1</i>	Light fishing <i>Species 2</i>	Handline <i>Species 3</i>	Longline <i>Species 4</i>	Trammel net <i>Species 5</i>	Bot. set gill net <i>Species 6</i>
Associated gear	Trammel net Bot. set gill net	Trammel net Bot. set gill net	Drill net Handline Light fishing	Disco fish Light fishing	Longline Light fishing	
Season range from	Enayam	Muttom	Enayam	Muttom	Kaddiapattanam	
to	KK	Muttom	KK	Muttom	KK	
Off-season range from	Neerodi	Muttom	to Kerala	Muttom	No off-season	
to	Chinnamuttom	Muttom		Muttom	No off-season	
No. of crafts	122					

3.3 James Nagar

Village code : 3.3

Population number (1986) not known

No. of Fishermen groups : none

James Nagar is not a real fishing village, as it is not situated on the coast and has no beach. According to a villager, there are only 65 households in James Nagar from which 15 persons are engaged in fishing.

3.4 Kaddiapattanam

Village code : 3.4

Population number (1986) 5170

No. of Fishermen groups : 3

Kattumaram group 34

Species ranking	Shrimp	Squid+Cuttlefish	Shark	Vella	Trevally	
Gear ranking	Trammel net	Handline	Disco fish	Drill net	Mackerel net	
Associated gear	<i>Species 1</i> Trammel net	<i>Species 2</i> Disco fish Trammel net	<i>Species 3</i> Handline Drift net	<i>Species 4</i> Handline Shark line	<i>Species 5</i> Handline Trammel net	<i>Species 6</i> Handline Taimul net
Season range from	Kottilpadu	Colachel	Colachel	Colachel	Colachel	Kaddiapattanam
to	Pillaihothope	Pillaihothope	Pallam	KK	Pillaihothope	Kaddiapattanam
Off-season range from	Kottilpadu	Colachel	Kaddiapattanam	All year season	Colachel	Kaddiapattanam
to	Pillaihothope	Pillaihothope	Kaddiapattanam	All year season	Pillaihothope	Kaddiapattanam
No. of crafts	701					

Vallam group 34

Species ranking	Shrimp	Squid+Cuttlefish	Seefish	Rock cod	Tuna	Grouper
Gear ranking	Disco fish	Drift net	Trammel net	Dot. set gill net	Longline	Handline
Associated gear	<i>Species 1</i> Trammel net	<i>Species 2</i> Handline Disco fish	<i>Species 3</i> Drift net Handline	<i>Species 1</i> Handline Longline	<i>Species 5</i> Drift net	<i>Species 6</i> Longline Handline Bot. set gill net
Season range from	Puthenthurai (2)	Neerodi	Kaddiapattanam	Kaddiapattanam	Kaddiapattanam	Kaddiapattanam
to	Rajakamangalam	KK	Kaddiapattanam	KK	Kaddiapattanam	Kaddiapattanam
Off-season range from	Kaddiapattanam	Neerodi	Kaddiapattanam	Kaddiapattanam	Kaddiapattanam	Kaddiapattanam
to	Arokiapurani	KK	Arokiapuram	KK	Kaddiapattanam	Kaddiapattanam
No. of crafts	254					

Boat group 34

Species ranking	Shrimp	Squid+Cuttlefish	Seer fish (Seela)	Seer fish	Grouper	
Gear ranking	Trammel net <i>Species 1</i>	Disco rope net <i>Species 2</i>	Trawl net <i>Species 3</i>	Trolling line <i>Species 4</i>	Longline <i>Species 5</i>	Handline <i>Species 6</i>
Associated gear	Trammel net	Disco rope	Trawl net Longline	Handline	Trawl net Longline	
Season range from	to Kerala	Neerodi	Colachel	Colachel	Neerodi	
to	Manakudy	Rajakamangalam	Rajakamangalam	KK		
Off-season range from	to Kerala	Neerodi	All year season	to Kerala	KK	
to		Manakudy	All year season		Arokiapuram	
No. of crafts	110					

3.5 Chinnavilai

Village code	3.5
Population number (1986)	829
No. of Fishermen groups	1 (kattumaram)
No. of vallams	7
No. of mechanised boats	8

Kattumaram group 35

Species ranking	lobster	Shrimp	Squid+Cuttlefish	Seer fish	Vella	Caranx
Gear ranking	Handline <i>Species 1</i>	Trammel net <i>Species 2</i>	Monofil.Net <i>Species 3</i>	Trolling line <i>Species 1</i>	Longline <i>Species 5</i>	<i>Species 6</i>
Associated gear	Trammel net	Trammel net	Handline	Handline Longline Trolling line	Handline Longline Trolling line	Long inc Trolling line
Season range from	Chinnav ilai	Colachel	Chinnavilai	Chinnavilai	Chinnavilai	Chinnavilai
to	Chinnav ilai	Kaddiapattanam	Chinnavilai	Chinnavilai	Chinnavilai	Chinnav ilai
Off-season range from	Chinnavilai	Colachel	Chinnavilai	Chinnavilai	Chinnavilai	Chinnavilai
to	Chinnavilai	Kaddiapattanani	Chinnavilai	Chinnavilai	Chinnavilai	Chinnavilai
No. of crafts	142					

3.6 Periavilai

Village code	3.6
Population number(1986)	1148
No. of Fishermen groups	: 1 (kattumaram)
No. of vallams	: 13 (fishermen gave other information)
No. of mechanised boats	: 7

Kattumaram group 36

Species ranking	Shrimp	Squid+Cuttlefish	Rock cod	Grouper	Emperor bream	Vella
Gear ranking	Trammel net <i>Species 1</i>	Monofil.Net <i>Species 2</i>	I)isco fish <i>Species 3</i>	Handline <i>Species 4</i>	Anchovy net <i>Species 5</i>	Sardine net <i>Species 6</i>
Associated gear	Trammel net	Disco fish Handline	Ilandline	Handline	Handline	Beach seine
Season range from	Colachel	Puthoor	Puthoor	Puthoor	Periavilai	Periavilai
to	Kaddiapattanam	Chinnavilai	Chinnavilai	Chinnavilai	Periavilai	Periavilai
Off-season range from	(olachel	Puihoor	Puthoor	Puthoor	Periavilai	Periavilai
to	Kaddiapattanam	Chinnavilai	Chinnavilai	Chinnavilai	Periavilai	Periavillai
No. of crafts	119					

3.7 Puthoor

Village code	3.7
Population number (1986)	2061
No. of Fishermen groups	2 (kattumaram and vallam)
No. of mechanised boats	2

Kattumaram group 37

Species ranking	lobster	Shrimp	Squid+Cuttlefish	Seer fish	Grouper	Vella
Gear ranking	Sardine net <i>Species 1</i>	longline <i>Species 2</i>	Handline <i>Species 3</i>	Mackerel net <i>Species 4</i>	Trammel net <i>Species 5</i>	Anchovy net <i>Species 6</i>
Associated gear	Trammel net	Trammel net	Handline	Handline Drill net Trammel net	Longline Trammel net Handline	Handline Trammel net
Season range from	Puthoor	Kurumbanai	Colachel	Colachel	Colachel	Colachel
to	Puthoor	Kaddiapattanam	Kaddiapattanam	Kaddiapattanam	Kaddiapattanam	Kaddia- pattanam
Off-season range from	Puthoor	Kurumbanai	Colachel	Colachel	Kurumbanai	Colachel
to	Puthoor	Kaddiapattanam	Kaddiapattanam	Kaddiapattanam	Pallam	Kaddia- pattanam
No. of crafts	281					

Vallam group 37

Species ranking	Shrimp	Squid+Cuttlefish	Tuna	Seer fish	Caranx	Grouper
Gear ranking	Trammel net <i>Species 1</i>	Longline <i>Species 2</i>	Handline <i>Species 3</i>	Mackerel net <i>Species 4</i>	Monofil.net <i>Species 5</i>	<i>Species 6</i>
Associated gear	Trammel net	Handline	Longline	Handline	Longline	Longline
Season range from	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi	Puthoor
to	KK	KK	KK	KK	KK	Ptithoor

Off-season range from	Neerodi	Neerodi	All year season	Neerodi	Neerodi	Puthoor
to	KK	KK	All year season	KK	KK	Puthoor
No. of crafts	33					

4.1 Kottilpadu

Village code	: 4.1
Population number(1986)	: 2115
No. of Fishermen groups	: 1 (kattumaram)
No. of vallams	: 126 (fishermen gave other information)
No. of mechanised boats	20

Kattumaram group 41

Species ranking	Shrimp	Squid+Cuttlefish	Seerfish	Grouper	Caranx	Sardine
Gear ranking	Trammel net <i>Species 1</i>	Handline <i>Species 2</i>	Trolling line <i>Species 3</i>	Sardine net <i>Species 4</i>	Anchovy net <i>Species 5</i>	<i>Species 6</i>
Associated gear	Trammel net	Handline	Handline Trolling line Shrimp net	Handline Shrimp net	Sardine net	
Season range from	Enayam	Colachel	Colachel	Colachel	Colachel	Colachel
to	Periavilai	Periavilai	Periavilai	Periavilai	Periavilai	Puthoor
Off-season range from	Colachel	Colachel	Colachel	All year season	Colachel	Colachel
to	Kaddiapattanam	Peciavilai	Periavilai	All year season	Periavilai	Puthoor
No. of crafts	183					

4.2 Colachel

Village code	4.2
Population number(1986)	9167
No. of Fishermen groups	: 3

Kattumaram group 42

Species ranking	Shrimp	Squid+Cuttlefish	Seerfish	Vella	Trevallay	Grouper
Gear ranking	Handline <i>Species 1</i>	Longline <i>Species 2</i>	Trammel net <i>Species 3</i>	Trolling line <i>Species 4</i>	Disco fish <i>Species 5</i>	Anchovy net <i>Species 6</i>
Associated gear	Trammel net	Handline Disco fish	Handline Trolling line	Handline Longline	Handline Longline	Handline Longline
Season range from	Kurumbanai	Thengapattanam	Thengapattanam	Enayam	Thengapattanam	Puthenthurai(2)
to	Puthoor	Muttom	Muttom	Kaddiapattanam	Kaddiapattanam	Muttom
Off-season range from	Colachel	Enayam	Colachel	Colachel	Colachel	Colachel
to	Colachel	Muttom	Colachel	Colachel	Colachel	Colachel
No. of crafts	593					

Vallam group 42

Species ranking	Shrimp	Squid+Cuttlefish	Seer fish	Tuna	Caranx	Vella
Gear ranking	Trammel net <i>Species 1</i>	Handline <i>Species 2</i>	Long ne <i>Species 3</i>	Trolling line <i>Species 4</i>	Drift net <i>Species 5</i>	Disco fish <i>Species 6</i>
Associated gear	Trammel net	Handline	Disco fish Handline Drift net	Handline Drift net	Disco fish Handline	Trolling line Handline Drift net
Season range from	Neerodi	Neerodi	Kurumbanai	Kurumbanai	Kurumbanai	Kurumbanai
to	KK	Muttom	Puthoor	Puthoor	Mutiom	Muttom
Off-season range from	Neerodi	Necrodi	Kurumbanai	Kurumbanai	Kurumbanai	Kurumbanai
to	KK	Muttom	Puthoor	Puthoor	Muttom	Muttom
No. of crafts	101					

Boat group 42

Species ranking	Squid+Cuttlefish	Mackerel	Grouper	Emperor bream	Scad	Threadlin bream
Gear ranking	Scoop net <i>Species 1</i>	<i>Species 2</i>	<i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	Scoop net	Scoop net	Scoop net	Scoop net	Scoop net	Scoop net
Season range from	Neerodi	Neerodi	Necrodi	Neerodi	Neerodi	Neerodi
to	KK	KK	KK	KK	KK	KK
Off-season range from	No off-season	Neerodi	Neerodi	Neerodi	Necrodi	Neerodi
to	No off-season	KK	KK	KK	KK	KK
No. of crafts	423					

4.3 Simon Colony

Village code 4.3
 Population number (1986) : not known
 No. of Fishermen groups : 3

Kattumaram group 43

Species ranking	Shrimp	Squid+Cuttlefish	Seerfish	Grouper	Emperor bream	Rockcod
Gear ranking	Handline <i>Species 1</i>	Drift net <i>Species 2</i>	Trammel net <i>Species 3</i>	Longline <i>Species 4</i>	Trolling line <i>Species 5</i>	Sardine net <i>Species 6</i>
Associated gear	Trammel net	Handline	Handline Drift net Trolling line	Handline Long line	Handline Longline	Handline Long line
Season range from	Neerodi	Kodimunai	Kodimunai	Kodimunai	Kodimunai	Kodimunai
to	KK	Muttom	Muttom	KK	KK	KK
Off-season range from	Neerodi	Kodimunai	Kodimunai	Kodimunai	Kodimunai	Kodimunai
to	Muttom	Muttom	Muttom	KK	KK	KK
No. of crafts	159					

Vallam group 43

Species ranking	Shrimp	Seer fish	luna	Flagatis (Jack)	Barracuda (N)	Vella
Gear ranking	Drift net <i>Species 1</i>	Trammel net <i>Species 2</i>	Mackerel net <i>Species 3</i>	Handline <i>Species 4</i>	Longline <i>Species 5</i>	Trolling line <i>Species 6</i>
Associated gear	Trammel net	Drift net Handline Trolling line Longline	Long line	Handline	Handline	
Season range from	Neerodi	Neerodi	Thengapattanam	Enajani	Enayam	Enayam
to	KK	Colachel	Arokiapuram	Muttom	Muttoni	Muttom
Off-season range from	Kodumunai	Enayam	Enayam	Enayam	Enayam	Enayam
to	Muttoni	Colachel	Colachel	Muttom	Muttom	Muttom
No. of crafts	7					

Boat group 43

Species ranking	Squid+Cuttlefish	Grouper	Threadfin bream	Triggerfish	Scad	Barracuuda
Gear ranking	Scoop net <i>Species 1</i>	<i>Species 2</i>	<i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	Scoop net	Scoop net	Scoop net	Scoop net	Scoop net	Scoop net
Season range from	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi
to	Arokiapuram	Arokiapuram	Arokiapurani	Arokiapuram	Arokiapuram	Arokiapuram
Off-season range from	No off-season	No off-season	No off-season	No off-season	No off-season	No off-season
to	No off-season	No off-season	No off-season	No off-season	No off-season	No off-season
No. of crafts	19					

4.4 Kodimunai

Village code	: 4.4
Population number(1986)	: 4260
No. of Fishermen groups	2 (kattumaram)
No. of vallams	: 66 (a different figure given by fishermen)

Kattumaram group 44

Species ranking	Shrimp	Squid+Cuttlefish	Seer fish	Grouper	Sardin	Anchovy
Gear ranking	Handline <i>Species 1</i>	Trammel net <i>Species 2</i>	Longline <i>Species 3</i>	Drift net <i>Species 4</i>	Sardine net <i>Species 5</i>	Anchovy net <i>Species 6</i>
Associated gear	Trammel net	Handline	Handline Drift net	Handline	Sardine net	Anchovy net
Season range from	Thengapattanam	Vaniakudy	Neerodi	Kodimunai	Kodimunai	Kodimunai
to	Kottipadu	Colachel	Colachel	Kadimunai	Kodimunai	Kodimunai
Off-season range from	Vaniakudy	Vaniakudy	Kodimunai	Kodimunai	Kodimunai	Kodimunai
to	Colachel	Colachel	Kodimunai	Kodimunai	Kodimunai	Kodimunai
No. of crafts	277					

Boat group 44

Species ranking	Shrimp	Ribbon fish	Seer fish	Pomfret	Mackerel	Scad
Gear ranking	Scoop net <i>Species 1</i>	Hand line <i>Species 2</i>	Trammel net <i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	Trammel net	Scoop net	Handline	Scoop net	Scoop net	Scoop net
Season range from	Neerodi	Kurumbanai	To Kerala	Neerodi	Enayam	Kurumbanai
to	Arokiapuram	Colachel		KK	Muttom	Colachel
Off-season range from	Neerodi	Kodiamunai	To Kerala	To Kerala	Kurumbanai	Kurumbanai
to	Kodimunai	Kodimunai			Colachel	Colachel
No. of crafts	75					

4.5 Vaniakudy

Village code	4.5
Population number (1986)	3127
No. of Fishermen groups	: 2 (kattumaram)
No. of vallams	: 11 (fishermen gave a different figure)

Kattumaram group 45

Species ranking	Shrimp	Squid+Cuttlefish	Sardine	Anchovy	Whitefish	Ribbon fish
Gear ranking	Trammel net <i>Species 1</i>	Anchovy net <i>Species 2</i>	Sardine net <i>Species 3</i>	Disco line <i>Species 4</i>	Boat seine <i>Species 5</i>	<i>Species 6</i>
Associated gear	Trammel net	Disco line	Sardine net	Anchovy net	Boat seine	Boat seine
Season range from	Enayam	Enayam	Enayam	Thengapattanam	Thengapattanam	Raman T
to	Muttom	Muttom	Colachel	Muttom	Kottilpadu	Kottilpadu
Off-season range from	Enayam	Enayam	Vaniakudy	Vaniakudy	Thengapattanam	Vaniakudy
to	Muttom	Muttom	Vaniakudy	Vaniakudy	Kottilpadu	Vaniakudy
No. of crafts	178					

Boat group 45

Species ranking	Squid+Cuttlefish	Shrimp	Shark	Grouper	Rock cod	
Gear ranking	Drift net <i>Species 1</i>	Handline <i>Species 2</i>	Trammel net <i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	Handline	Trammel net	Drift net Handline	Handline	Handline	
Season range from	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi	
to	Arokiapuram	Arokiapuram	Arokiapuram	Arokiapuram	Arokiapuram	
Off-season range from	to Kerala	to Kerala	to Kerala	to Kerala	to Kerala	
to						
No. of crafts	122					

This boat group said they do not fish from June to August, but only during the remaining months of the year.

4.6 Kurumbanai

Village code : 4.6
 Population number (1986) : 2929
 No. of Fishermen groups 3

Kattumaram group 46

Species ranking	Shrimp	Squid+Cuttlefish	Seerfish	Pomfret	Grouper	Whitefish
Gear ranking	Trammel net <i>Species 1</i>	Handline <i>Species 2</i>	Drift net <i>Species 3</i>	Monofilnet <i>Species 4</i>	Sardine net <i>Species 5</i>	Anchovy net <i>Species 6</i>
Associated gear	Trammel net	Handline	Drift net Handline	Drift net	Handline	Trammel net
Season range from	Enayam	Thoothoor	Thoothoor	Enayam	Thoothoor	Kurumbanai
to	KK	Muttom	Muttom	KK	KK	Kurumbanai
Off-season range from	Fnayam	Kurumbanai	Kurumbanai	Kurumbanai	Kurmbani	Kurumbanai
to	KK	Kurumbanai	Kurumbanai	Kurumbanai	Kurumbanai	Kurumbanai
No. of crafts	509					

VaHam group 46

Species ranking	Squid+Cuttlefish	Shrimp	Grouper	Rock cod	Seerfish	Barracuda
Gear ranking	Handline <i>Species 1</i>	Trammel net <i>Species 2</i>	Drift net <i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	Flandline	Trammel net	Handline	Handline Drift net	Handline	Handline
Season range from	Neerodi	Thengapattanam	Neerodi	Kurumbanai	Kurumbanai	Kurumbanai
to	KK	Muttom	KK	Arokipuram	Colachel	Kurumbanai
Off-season range from	Neerodi	Thengapattanam	Kurumbanai	Kurumbanai	Kurumbanai	Kurumbanai
to	KK	Muttom	Kurumbanai	KK	Colachel	Kurumbanai
No. of crafts	261					

Boat group 46

Species ranking	Shrimp	Squid+Cuttlefish	Sardine	Anchovy	Grouper	
Gear ranking	Trawl net <i>Species 1</i>	Trammel net <i>Species 2</i>	<i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	Trammel net	Trawl net	Trawl net	Trawl net	Trawl net	
Season range from	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi	
to	KK	KK	KK	KK	KK	
Off-season range from	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi	
to	KK	KK	KK	KK	KK	
No. of crafts	31					

These boats move to Kerala every year during the months May and June.

5.1 Midalam

Village code	5.1
Population number(1986)	: 51
No. of Fishermen groups	1 (kattumaram)
No. of vallams	<10
No. of mechanised boats	none

Kattumaram group 51

Species ranking	Shrimp	Squid+Cuttlefish	Seer fish	Tuna	Mackerel	Sardine
Gear ranking	MonolilNet <i>Species 1</i>	Trammel net <i>Species 2</i>	Handline <i>Species 3</i>	Beach seine <i>Species 4</i>	Boat seine <i>Species 5</i>	Sardine net <i>Species 6</i>
Associated gear	Disco line	Handline	Reach seine	Disco line Monolil.net	Sardine net Monalil.net	Trammel net
Season range from	Neerodi	Midalam	Midalam	Midalam	Midalam	Midalam
to	Neerodi	Midalam	Midalam	Midalam	Midalam	Midalam
Off-season range from	Neerodi	Midalam	Midalam	No off-season	Midalam	Midalam
to	Neerodi	Midlama	Midlama	No off-season	Midalam	Midalam
No. of crafts	46					

5.2 Mel Midalam

Village code	5.2
Population number (1986)	1575
No. of Fishermen groups	2 (kattumaram and val lam)
No. of vallams	16
No. of mechanised boats	none

Kattumaram group 52

Species ranking	Shrimp	Squid+Cuttlefish	Seer fish	White fish	Sardine (K)	Anchovy
Gear ranking	Trammel net <i>Species 1</i>	Handline <i>Species 2</i>	Sardine net <i>Species 3</i>	Anchovy net <i>Species 4</i>	Monolil. net <i>Species 5</i>	Trolling line <i>Species 6</i>
Associated gear	Handline	Handline Trolling line	Handline Trolling line	Monolilnet Handline	Sardine net	Anchovy net
Season range from	Enayam	Melmidalam	Enayam	Melmidalam	Thoothoor	Enayam
to	Midalam	Melmidalam	Kurumbanai	Melmidalam	Colachel	Kurumbanai
Oil-season range from	Enayam	Melmidalam	Enayam	Melmidalam	Thoothoor	Thengapannam
to	Midalam	Melmidalam	Kurumbanai	Melmidlam	Colachel	Kurumbanai
No. of crafts	46					

Vallam group 52

Species ranking	Shrimp	Squid+Cuttlefish	Shark	Seer fish	Poml'ret	Vella
Gear ranking	Trammel net <i>Species 1</i>	Handline <i>Species 2</i>	Longline <i>Species 3</i>	Sardine net <i>Species 4</i>	Anchovy net <i>Species 5</i>	Drift net <i>Species 6</i>

Associated gear	Trammel net	Flandline Longline	Hand line Long ne	Handline	Drill net Handline	Drill net
Season range from	Neerodi	Neerodi	Neerodi	Melmidalani	Mel Meidalam	Mel Midalam
to	Colachel	KK	KK	Mel Midalam	Mel Midalam	Mel Midalam
Off-season range from	Mel Midalam	Mel Midalam	Mel Midalam	Mel Midalam	Mel Midalam	Mel Midalam
to	Mel Midalam	Mel Midalam	Mel Midalam	Mel Midalam	Mel Midalam	Mel Midalam
No. of crafts	16					

5.3 Enayam

Village code : 5.3
Population number(1986) : 3180
No. of Fishermen groups : **2 (kattumaram)**
No. of mechanised boats : 6

Kattumaram group 53

Species ranking	Shrimp	Shark	Seer fish	Tuna	Sardine	Anchovy
Gear ranking	Trammel net <i>Species 1</i>	Prawn net <i>Species 2</i>	Longline <i>Species 3</i>	Handline <i>Species 4</i>	Anchovy net <i>Species 5</i>	Sardine net <i>Species 6</i>
Associated gear	Trammel net Prawn net	Handline Longline	Handline Longline	Handline Longline	Sardine	Anchovy net
Season range from	Neerod l	Thengapattanam	Enayam	Enayam	Thengapattanam	Erarnanthurai
to	Colachel	Mel Midalam	Enayam	Enayam	Midalam	Vaniakudy
Off-season range from	Thengapattanam	Thengapattanam	No off-season	Enayam	No off-season	Erarnanthurai
to	Midalam	Mel Midalam	No off-season	Enayam	No off-season	Vaniakudy
No. of crafts	241					

Vallam group 53

Species ranking	Shrimp	Squid+Cuttlefish	Seer fish	Pomfret	Tuna	Elagastis (Jack)
Gear ranking	trammel net <i>Species 1</i>	Prawn net <i>Species 2</i>	Handline <i>Species 3</i>	Drill net <i>Species 4</i>	Anchovy net <i>Species 5</i>	Boat seine <i>Species 6</i>
Associated gear	Trammel net Prawn net	Handline	Handline Drill net	Drift net	Drift net Handline	Drill net Handline Longline
Season range from	Neerodi	Enayam	Enayam	Enayam	Enayam	Enayam
to	Muttom	Enayam	Enayam	Enayam	Enayam	Enayam
Off-season range from	No off-season	No off-season	No off-season	No off-season	All year season	No off-season
to	No oil-season	No off-season	No off-season	No off-season	All year season	No off-season
No. of crafts	168					

5.4 Puthenthurai

Village code	5.4
Population number (1986)	7003
No. of Fishermen groups	2 (kattumaram and vallam)
No. of mechanised boats	28 (fishermen gave a different figure)

Kattumaram group 54

Species ranking	Shrimp	Seerfish	Elagatis (Jack)	Caranx	Spotted Rock cod	Tuna
Gear ranking	Trammel net Species 1	Mackerel net Species 2	Sardine net Species 3	Handline Species 4	Scoop net Species 5	Monofil.net Species 6
Associated gear	Trammel net	Handline	Handline	Handline	Handkne	Handline Mackerel net
Season range from	Neerodi	Puthenthurai	Puthenthurai	Puthenthurai	Puthenthurai	Puthenthurai
to	Neerodi	Midalam	Midalam	Puthenthurai	Puthenthurai	Puthenthurai
Off-season range from	Potthurai	Puthenthurai	Puthenthurai	All year season	Puthenthurai	Puthenthurai
to	Midalani	Puthenthurai	Puthenthurai	All year season	Puthenthurai	Puthenthurai
No. of crafts	490					

Vallam group 54

Species ranking	Shrimp	Seer fish	Rock cod	Caranx	Squid+Cutlefish	Barracuda
Gear ranking	Trammel net Species 1	Mackerel net Species 2	Handline Species 3	Drift net Species 4	Longline Species 5	Trolling line Species 6
Associated gear	Trammel net	Flandline	Longline Mackerel net Drift net	Longline Mackerel net	Handline	Handline Disco line
Season range from	Thoothoor	Puthenthurai	Puthenthurai	Puthenthurai	Puthenthurai	Puthenthurai
to	Kurumbanai	Puthenthurai	KK	Puthenthurai	Puthenthurai	Puthenthurai
Off-season range from	Thoothoor	Puthenthurai	Puthenthurai	Puthenthurai	Puthenthurai	No off-season
to	Kurumbanai	Puthenthurai	KK	Puthenthurai	Puthenthurai	No off-season
No. of crafts	425					

5.5 Ramanthurai

Village code	5.5
Population number (1986)	2805
No. of Fishermen groups	2 (kattumaram and vallam)
No. of mechanised boats	7

Kattumaram group 55

Species ranking	Sardine	Anchovy	Tuna	Mackerel	Seer fish	Trigger fish
Gear ranking	Anchovy net Species 1	Sardine net Species 2	Mackerel net Species 3		Longline Species 5	Beach seine Species 6
Associated gear	Sardine net	Anchovy net	Longline Mackerel net	Mackerel net Longline	Kara valai	Longline

Season range from	Potthurai	Thoothoor	Poothurai	Eramanthurai	Raman T	Raman T
to	Enayam	Colachel	Midalam	Midalam	Raman T.	Raman T.
Off-season range from	Thengapattanam	Eramanthurai	RamanT	RamanT.	RamanT.	RamanT.
to	Raman T.	Colachel	Raman T.	Raman T.	Raman T.	Raman T.
No. of crafts	103					

Vailam group 55

Species ranking	Shrimp	Squid+Cuttlefish	Seer fish	Grouper	Rock cod	Caranx
Gear ranking	Trammel net	Disco.line	Handline	Longline	Drift net	Scoop net
	<i>Species 1</i>	<i>Species 2</i>	<i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	Trammel net	Disco line	Drift net Longline	Longline	Longline	Handline
Season range from	Neerodi	Neerodi	Neerodi	Eramanthurai	Neerodi	Raman T.
to	Colachel	KK	KK	KK	KK	Raman T.
Off-season range from	Neerodi	Raman T.	Raman T.	Raman T.	Eramanthurai	Raman T.
to	Colachel	Raman T.	Raman T.	Raman T.	Midalam	Raman T.
No. of crafts	152					

5.6 Thengapattnam or Mullurthurai

Village code	: 5.6
Population number(1986)	: 2112
No. of Fishermen groups	: 2 (kattumaram and vallam)
No. of mechanised boats	: 2

Kattumaram group 56

Species ranking	Shrimp	Sardin	Mackerel	Tuna	Seer fish	Ribbon fish
Gear ranking	Handline	Trammel net	Monofil.net	Sardine net	Anchovy net	Drift net (big)
	<i>Species 1</i>	<i>Species 2</i>	<i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	Trammel net	Sardine net	Anchovy net Sardine net Monofil.net	Sardine net Monofil.Net Handline	Drift net Handline	Boat seine
Season range from	Neerodi	Thengapattanam	Thengapattanam	Thengapattanam	Pothurai	Thenga- pattanam
to	KK	Thengapattanam	Thenagapattanam	Thengapattanam	Enayam	Thenga- pattanam
Off-season range from	Thengapattanam	Thenagapattanam	Thengapattanam	Thenagapattanam	No off-season	No off-season
to	Thengapattanam	Thenagapattanam	Thengapattanam	Thenagapattanam	No off-season	No off-season
No. of crafts	20					

Vallam group 56

Species ranking	Mackerel	Caranx	Rock cod	Tuna	Shrimp	Squid+ Cuttlefish
Gear ranking	Mackerel net	Longline	Trammel net	Disco line	Handline (RT)	
	<i>Species 1</i>	<i>Species 2</i>	<i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>

Associated gear	Mackerel net	Longline	Longline	Trammel net	Disco line	
Season range from	Neerodi	Neerodi	Thengapaltanam	Neerodi	Neerodi	Necrodi
to	KK	Arokiapuram	Thengapattanam	KK	Muttom	KK
Off-season range from	Thengapattanam	Thengapattanan	Thengapattanam	Thengapattanam	Thengapattanam	No oft-season
to	Thengapattanam	Thengapattanan	Thengapattanam	Thengapattanam	Thengapattanam	No oft-season
No. of crafts	26					

6.1 Eramanthurai

Village code	6.1
Population number (1986)	1882
No. of Fishermen groups	2 (kattumaram and vallam)
No. of mechanised boats	

Kattumaram group 61

Species ranking	Anchovy	Sardine	Mackerel	Shrimp	Squid+Cuttlefish	Ribbon fish
Gear ranking	Anchovy net <i>Species 1</i>	Sardine net <i>Species 2</i>	Shrimp net <i>Species 3</i>	Trammel net <i>Species 4</i>	Handline (jig) <i>Species 5</i>	Boat seine <i>Species 6</i>
Associated gear	Anchovy net	Sardine net	Shrimp net	Trammel net	Handline (jig)	Boat seine
Season range from	Vallavillai	Vallavillai	Thoothoor	Thoothoor	Necrodi	Vallavillai
to	Enayam	Enayam	Enayam	Enayam	Enayam	Enayam
Off-season range from	Poothurai	Poothurai	All year season	Poothurai	Neerodi	Vallavillai
to	Enayam	Enayam	All year season	Thengapattanam	Enayam	Enayam
No. of crafts	7					

Vallam group 61

Species ranking	Tuna	Seer fish	Mackerel	Scad	Caranx	Ribbon fish
Gear ranking	Longline <i>Species 1</i>	Handline <i>Species 2</i>	Trolling line <i>Species 3</i>	Trammel net <i>Species 4</i>	Boat seine <i>Species 5</i>	<i>Species 6</i>
Associated gear	Longline	Longline Trolling line	Mackerel net	Handline	Handline	Handline Boat seine
Season range from	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi	Vallavillai
to	KK	KK	Colachel	Colachel	Eramanthurai	Enayam
Off-season range from	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi	Vallavillai
to	Colachel	Colachel	Midalam	Midalam	Eramanthurai	Enayam
No. of crafts	36					

6.2 Poothurai

Village code	6.2
Population number (1986)	3582
No. of Fishermen groups	3

Kattumaram group 62

Species ranking	Sardine	Anchovy	Shrimp	Squid+Cuttlefish	Mackerel	Sardine (K)
Gear ranking	Sardine net Species 1	Anchovy net Species 2	Prawn net Species 3	Handline Species 4	Trammel net Species 5	Mackerel net Species 6
Associated gear	Sardine net	Anchovy net	Prawn net Trammel net	liandline	Mackerel net Handline	Sardine net
Season range from	Necrodi	Neerodi	Chinnathurai	Poothurai	Vallavillai	Vallavillai
to	Enayam	Enayam	Thengapaltanam	Poothurai	Enayam	Enayam
Off-season range from	Thoothoor	Pooihurai	Thoothoor	Vallavillai	Vallavillai	Vallavillai
to	Poothurai	Poothurai	Eramanthurai	Enayam	Enayam	Enayam
No. of crafts	56					

Vallam group 62

Species ranking	Shrimp	Tuna	Rock cod	Threadfin bream	Caranx	Barracuda
Gear ranking	Handline (M) Species 1	Trammel net Species 2	Trolling line Species 3	Drill line Species 4	Mackerel net Species 5	Longline Species 6
Associated gear	Trammel net	L)rifl net Handline Trolling line Mackerel net	Longline Handline	Longline Handline	Longline Handline	Drift net Handline Longline rolling line
Season range from	Neerodi	Neerodi	Neerodi	Neerodi	Poothurai	Poothurai
to	KK	Muttom	Muttom	Muttom	KK	Colachel
Off-season range from	Necrodi	Necrodi	Necrodi	No oil-season	Poothurai	Poothurai
to	Enayam	Enayam	Enayam	No off-season	Colachel	Enayam
No. of crafts	40					

Boat group 62

Species ranking	Shark	Tuna	Threadfin bream	Rock cod	Caranx	Sail fish
Gear ranking	Longline Species 1	Handline Species 2	Drift net Species 3	Trolling line Species 4	Monofil. net Species 5	Species 6
Associated gear	Longline	Trolling line Handline	Handline Monofil. net	liandline Monofil. net	Longline	Drift net
Season range from	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi
to	Arokiapuram	Arokiapuram	Arokiapuram	Arokiapuram	Arokiapuram	Arokiapuram
Off-season range from	No off-season	No off-season	No off-season	No off-season	No off-season	No off-season
to	NC) oil-season	No off-season	No off-season	No off-season	No off-season	No off-season
No. of crafts	20					

6.3 Thoothoor

Village code	: 6.3
Population number(1986)	: 3581
No. of Fishermen groups	: 3

Kattumaram group 63

Species ranking	Mackerel	Scad	Sardine	Anchovy	Squid+Cuttlefish	Shrimp
Gear ranking	Sardine net Species 1	Anchovy net Species 2	Mackerel net Species 3	Handline Species 4	Trammel net Species 5	Monofil. net Species 6
Associated gear	Mackerel net	Handline (M)	Sardine net	Anchovy net	Handline	Trammel net
Season range from	Marthandathurai	Marthandathurai	Vallavillai	Chinnathurai	Thoothoor	Marthanda- thurai
to	Enayam	Enayam	Eramanthurai	Poothurai	Thoothoor	Enayam
Off-season range from	Chinnathurai	Chinnathurai	Chinnathurai	No off-season	Thoothoor	Marthanda- thurai
to	Poothurai	Poothurai	Poothurai	No off-season	Thoothoor	Enayam
No. of crafts	79					

Vallam group 63

Species ranking	Grouper	Rokcod	Caranx	Threadfin bream	Tuna	Seer fish
Gear ranking	Longline <i>Species 1</i>	Trollingline <i>Species 2</i>	<i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	Longline Trolling line	Longline Trolling line	Longline Trolling line	Longline Trollin gline	Longline Trolling line	Longline Trolling line
Season range from	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi
to	KK	KK	KK	KK	KK	KK
Off-season range from	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi
to	Enayam	Enayam	Enayam	Enayam	Enayam	Enayam
No. of crafts	63					

Boat group 63

Species ranking	Shark	Rock cod	Grouper	Threadfin bream	Spotted Rock cod	Tuna
Gear ranking	Longline <i>Species 1</i>	Drift net <i>Species 2</i>	Handline <i>Species 3</i>	Trolling line <i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	Longline Drift net	Longline Trolling line	Longline Handline Trolling line	Longline Handline Trolling line	Longiine Handline Trolling line	Drift net
Season range from	Neerodi	Thoothoor	Thoothoor	Neerodi	Thoothoor	Neerodi
to	Aroldapuram	KK	KK	KK	KK	KK
Off-season range from	Neerodi	Thoothoor	Thoothoor	Neerodi	Thoothoor	Neerodi
to	Arokiapuram	KK	KK	KK	KK	KK
No. of crafts	202					

6.4 Chinnathurai

Village code	6.4
Population number (1986)	3676
No. of Fishermen groups	: 3

Kattumaram group 64

Species ranking	Mackerel	Anchovy	Safidine	Shrimp	Squid+Cuttlefish	Tuna
Gear ranking	Anchovy net <i>Species 1</i>	Prawn net <i>Species 2</i>	Mackerel net <i>Species 3</i>	Trammel net <i>Species 4</i>	Boat seine <i>Species 5</i>	Sardine net <i>Species 6</i>
Associated gear	Mackerel net	Anchovy net	Sardine net	Trammel net	Boat seine	Drift net
Season range from	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi
to	Eramanthurai	Eramanthurai	Eramanthurai	Eramanthurai	Eramanthurai	Eramanthurai
Off-season range from	All year season	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi
to	All year season	Eramanthurai	Eramanthurai	Eramanthurai	Eramanthurai	Eramanthurai
No. of crafts	84					

Vallam group 64

Specirs ranking	Tuna	Mackerel	Squid+Cuttlefish	Shrimp	Rock cod	Scad
Gear ranking	Mackerel net <i>Species 1</i>	Trammel net <i>Species 2</i>	Drift net <i>Species 3</i>	Longline <i>Species 4</i>	Trolling line <i>Species 5</i>	Disco line <i>Species 6</i>
Associated gear	Mackerel net Drift net Trolling line	Mackerel net Longline Handline	Disco line	Trammel net	Longline	Handline
Season range from	Neerodi	Neerodi	Neerodi	Neerodi	Colachel	Neerodi
to	KK	Eravi Puthenthurai	Muttom	Muttom	KK	Eravi Puthenthurai
Off-season range from	Neerodi	Neerodi	Neerodi	No off-season	No off-season	No off-season
to	KK	Eravi Puthenthurai	Muttom	No off-season	No off-season	No off-season
No. of crafts	9					

Boat group 64

Species ranking	Shark	Tuna	Rockcod	Threadfln bream	Seer fish	Caranx
Gear ranking	Longline <i>Species 1</i>	Drift net <i>Species 2</i>	Handline <i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	Longline Drift net	Longline Drift net	Longline Drift net	Longline Handline	Longline Drift net	Longline Drift net
Season range from	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi
to	KK	KK	Arokiapuram	Arokiapuram	KK	Arokiapuram
Off-season range from	All year season	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi
to	All year season	KK	Arokiapuram	Arokiapuram	KK	Arokiapuram
No. of crafts	92					

6.5 Eraviputhenthurai

Village code	: 6.5
Population number(1986)	: 2347
No. of Fishermen groups	3

Kattumaram group 65

Species ranking	Anchovy	Squid +Cuttlefish	Trigger fish	Scad	Tuna	Shrimp
Gear ranking	tandline (jig) <i>Species 1</i>	Longline <i>Species 2</i>	Anchovy net <i>Species 3</i>	Sardine net <i>Species 4</i>	Scoop net <i>Species 5</i>	Boat seine <i>Species 6</i>
Associated gear	Anchovy net Boat seine	H andline (jig)	Scoop net	Handline Sardine net	H andline Mackerel net	Trammel net
Season range from	Neerodi	Neerodi	Neerodi	Neerodi	Ncerodi	Marihanda- thurat
to	Raman T.	Raman T.	Enayam	Enayam	Muttom	Eravil Puthcnthurai
Off-season range from	Necrodi	Necrodi	Neerodi	No otT-season	No oil-season	No off-season
to	Colachel	Colachel	Enayam	No oil-season	No oil-season	No oil-season
No. of crafts	86					

Vallam group 65

Species ranking	Shrimp	Tuna	threadfin bream	Hardtailscad	Seer fish	Scad
Gear ranking	liandline <i>Species 1</i>	Longline <i>Species 2</i>	Anchovy net <i>Species 3</i>	Sardine net <i>Species 4</i>	Drill net <i>Species 5</i>	Trammel net <i>Species 6</i>
Associated gear	Trammel net	Drift net Handline Longl ine	Handlinc	Mackerel net Flandline	Longline Drift net	I landline
Season range from	Vallavillai	Neerodi	To Kerala	Neerodi	Neerodi	to Kerala
to	Thoothoor	Arokiapuram		Arokiapuram	Arokiapuram	
Off-season range from	No otT-season	to Kerala	To Kerala	to Kerala	Neerodi	to Kerala
to	No off-season					
No. of crafts	10					

Boat group 65

Species ranking	Shark					
Gear ranking	Lougline <i>Species 1</i>	<i>Species 2</i>	<i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	Longline					
Season range from	Neerodi					
to	KK					
Off-season range from	to Kerala					
to						
No. of crafts	12					

6.6 Vallavillai

Village code	6.6
Population number (1986)	: 5554
No. of Fishermen groups	: 3

Kattumaram group 66

Species ranking	tuna	Mackerel	Scad	Threadfin bream	Sardine	Anchovy
Gear ranking	Handline <i>Species 1</i>	Mackerel net <i>Species 2</i>	<i>Species 3</i>	Sardine net <i>Species 4</i>	Anchovy net <i>Species 5</i>	Trammel net <i>Species 6</i>
Associated gear	Handline	Mackerel net Handline	Handline Sardine net Anchovy net	Handline	Sardine net	Anchovy net
Season range from	Vallavillai	Vallavillai	Vallavillai	Vallavillai	Vallavillai	Vallavillai
to	Vallavillai	Vallavillai	Vallavillai	Vallavillai	Vallavillai	Vallavillai
Off-season range from	Neerodi	Neerodi	Neerodi	No off-season	Neerodi	Neerodi
to	Colachel	Colachel	Colachel	NC) off-season	Colachel	Colachel
No. of crafts	7					

Vallam group 66

Species ranking	Tuna	Mackerel	Scad	Hardtail scad	Caranx	Threadlin bream
Gear ranking	Drift net <i>Species 1</i>	Handline <i>Species 2</i>	Mackerel net <i>Species 3</i>	Trammel net <i>Species 4</i>	Longline <i>Species 5</i>	<i>Species 6</i>
Associated gear	Drift net Handline	Mackerel net	Handline Mackerel net	Handline Drift net	Hand line Longline	Trammel net
Season range from	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi
to	KK	KK	KK	KK	KK	KK
Off-season range from	Vallavillai	Vallavillai	Vallavillai	Vallavillai	Vallavillai	Vallavillai
to	Vallavillai	Vallavillai	Vallavillai	Vallavillai	Vallavillai	Vallavillai
No. of crafts	312					

Boat group 66

Species ranking	Shark					
Gear ranking	Longline <i>Species 1</i>	<i>Species 2</i>	<i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	Longline					
Season range from	Neerodi					
to	Arokiapuram					
Off-season range from	to Kerala					
to						
No. of crafts	27					

6.7 Marthandathurai

Village code	: 6.7
Population number (1986)	: 2709
No. of Fishermen groups	3

Kattumaram group 67

Species ranking	Triggerfish	Mackerel	Scad	Tuna	Sardine	Anchovy
Gear ranking	Handline <i>Species 1</i>	Scoop net <i>Species 2</i>	Sardine net <i>Species 3</i>	Anchovy net <i>Species 4</i>	Mackerel net <i>Species 5</i>	Trammel net <i>Species 6</i>
Associated gear	Scoop net Handline	Mackerel net Handline	Handline	Mackerel net Handline	Sardine net Handline	Anchovy net Handline
Season range from	Neerodi	Neerodi	Neerodi	Neerodi	Marthandathurai	Neerodi
	Vallavillai	Thengapattanam	Thoothor	Thengapattanam	Marthandathurai	Vallavillai
Off-season range from	Neerodi	Marthandathurai	No off-season	All year season	No off-season	No off-season
to	Vallavillai	Marthandathurai	No off-season	All year season	No off-season	No off-season
No. of crafts	95					

Vallam group 67

Species ranking	Rockcod	Threadfin bream	Elagatis (Jack)	Caranx	Tuna	Sailfish
Gear ranking	Longline <i>Species 1</i>	Handline <i>Species 2</i>	Mackerel net <i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	Longline Handline	Handline Longline	Longline	Longline	Longline Handline	Handline
Season range from	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi	Neerodi
to	Arokiapuram	Arokiapuram	Muttom	Muttom	KK	Arokiapuram
Off-season range from	Neerodi	Neerodi	No off-season	No off-season	No off-season	Neerodi
to	Muttom	Muttom	No off-season	No off-season	No off-season	Muttom
No. of crafts	214					

Boat group 67

Species ranking	Shark					
Gear ranking	Longline <i>Species 1</i>	<i>Species 2</i>	<i>Species 3</i>	<i>Species 4</i>	<i>Species 5</i>	<i>Species 6</i>
Associated gear	Longline					
Season range from	Neerodi					
to	Arokiapuram					
Off-season range from	Neerodi					
to	KK					
No. of crafts	8					

6.8 Neerodi

Village code	: 6.8
Population number(1986)	4230
No. of Fishermen groups	2 (kattumaram and vallam)
No. of mechanised boats	:7

Kattumaram group 68

Species ranking	Squid + Cuttlefish	Mackerel	Sardine	Anchovy	Scad	Tuna
Gear ranking	Handline <i>Species 1</i>	Monofil net <i>Species 2</i>	Mackerel net <i>Species 3</i>	Sardine net <i>Species 4</i>	Anchovy net <i>Species 5</i>	Trammel net <i>Species 6</i>
Associated gear	Handline	Mackerel net	Sardine net	Anchovy net	Handline Light fishing	Drill net
Season range from to	Neerodi Eramanthurai	Neerodi Eramanthurai	Neerodi Puthent hura i (2)	Neerodi Put henthurai (2)	Neerodi Chinnathurai	Neerodi Marthanda— thurai
Off-season range from to	Neerodi Eramanthurai	No off-season No off-season	No off—season No off—season	No off-season No off—season	No off—season No off—season	Neerodi Marthanda— thurai
No. of crafts	95					

Vallam group 68

Species ranking	Tuna	Seer fish	Mackerel	Shrimp	Flatfish	Squid + Cuttlefish
Gear ranking	Drill net <i>Species 1</i>	Mackerel net <i>Species 2</i>	Monofil net <i>Species 3</i>	Light fishing <i>Species 4</i>	Hand line <i>Species 5</i>	Trammel net <i>Species 6</i>
Associated gear	Drill net Handline	Drill net Handline	Mackerel net Handline Monofil.Net	Trammel net	Trammel net	Handline (jig) Monofil.Net
Season range from to	Neerodi KK	Neerodi KK	Neerodi Necrodi	Neerodi Fnayam	Neerodi Fnayam	Neerodi KK
Off-season range from to	Neerodi Colachel	No off-season No off-season	No off-season No off-season	No off-season No off - season	No off-season No. off-season	No off-season No. off-season
No. of crafts	382					

ANNEX 2

Data tables

2a. Species names

No	Species Name	Tamil Name	Latin Name
	Anchovy	Nethili	<i>Stolephorus bataviensis</i>
2.	Barracuda	Ola	<i>Sphyraena spp.</i>
3.	Barracuda (Neduvai)	Neduvai	
4.	Butterfish	Ponnarai	<i>Scatophagus spp.</i>
5.	Caranx	Vathai	<i>Caranx spp.</i>
6.	Elagatis (Jack)	Moadai	<i>Elagatis spp.</i>
7.	Emperor bream	Chevai	<i>Lethrinus spp.</i>
8.	Faltfish	Man an ge	<i>Cynoglossus spp.</i>
9.	Grouper	Vilameen	<i>Promicrops lanceolatus</i>
10.	Halfbeak	Mural	<i>Rhynchorhamphus spp.</i>
11.	Hardtail scad	Bangada/Vangadai	<i>Megalopsis condyla</i>
12.	Leatherjacket	Katta	<i>Chorinemus lysan</i>
13.	Lobster	Kairai	<i>Panulirus spp.</i>
14.	Mackerel	Ailai	<i>Rastrelliger kunagurla</i>
15.	Pomfret	Vaavai	<i>Pampus. Spp.</i>
16.	Ribbonfish	Vallai	
17.	Rock cod	Kalawa	<i>Epinephelus spp.</i>
18.	Sailfish	Thalai	<i>Istiophorus platypterus</i>
19.	Sardine	Chalalai	<i>Sardine/la spp.</i>
20.	Sardine (Keerimeen)	Keerimen	<i>Escualosa spp.</i>
21.	Scad	Koliyali	<i>Decaplerus spp.</i>
22.	Seer fish	Neimeen	<i>Scomberomorus spp.</i>
23.	Seer fish (Seela)	Seela	<i>Scomberomorus spp.</i>
24.	Shark	Surah	
25.	Shrimp	Iraal	<i>Penaeus Spp.</i>
26.	Silver belly	Karai	<i>Leiognathus spp.</i>
27.	Spotted Rockcod	Auluvai	<i>Epinephelus melanostigma</i>
28.	Threadfin bream	Chemmeen	<i>Nemipterus japonicus</i>
29.	Trevally	Paarai	<i>Alopius alopus</i>
30.	Triggertish	Kelathi	
31.	Tuna	Surai	<i>Thunnus/Katsuwonus spp.</i>
32.	Vella	Vella Kudipu	
33.	Whitefish	Kudipu	<i>Laciarus lactarius</i>

2b. Gear names

No.	Gear name	Tamil name
1	Beach Seine	Karai valai
2	Boat Seine	Tattumadi/Matti valai
3	Bottom set (Prawn gill net)	Ral valai
4	Bottom set gill net	Tallu valai
5	Bottom set gill net (deep waters)	Paru valai
6	Disco fish	Disco fish
7	Disco line	Kanawa disco
8	Disco rope net	Disco rope net
9	Drift net	Vazhi valai
10	Drift net (big)	Periavalai
11	Drift net (monofilament)	Kangoose valai
12	Drift net (Sardine net)	Chala valai
13	Drift net (small twines)	Vaazha valai
14	Handline	Kai Thoondi
15	Handline	Jig
16	Handline(KK)	Kutam kairu
17	Handline (M)	Mayakka
18	Handline (RT)	Rol toondi
19	Light fishing	Light fishing
20	Lobster net (bottom entangling net)	Kalral valai
21	Longline	Aayirumnzkal Thoondi/Mattu
22	Mackerel net	Ecchu valai/rol valai
23	Monofilament line	Thankuzi
24	Off-bottom and mid-water	Vazhi valai 2
25	Rol net	Rol valai
26	Rope net	Rope net
27	Scoopnet	Kancha
28	Shark longline	Surah mattu
29	Shark net	Surah valai
30	Surface and mid-water (Anchovy net)	Kacha valai
31	Trammel net (bottom)	Disco (rol) net
32	Trawl net (Bottom Otter)	Pal madi
33	Trawl net (Bottom Pair)	Trawl net (pair)
34	Trolling line	Oodu Kayaru

2c. Villages and Vessels

V ID*	Vcode*	Village name	B*		V*	Total*
11	1.1	Arokiapuram	4	220	60	284
12	1.2	Chinnamuttom	24	166	15	205
13	1.3	Kanyakumari	115	644	33	792
14	1.4	Kovalam	0	394	1	395
15	1.5	Kil-Manakudy	3	112	8	123
16	1.6	Manakudy	5	473	25	503
21	2.1	Pallam	7	145	23	175
22	2.2	Puthenthurai	1	13	0	14
23	2.3	Kesavanputhen Thurai	0	76	7	83
24	2.4	Pozhikarai	0	7	14	21
25	2.5	Periakadu	0	8	1	9
26	2.6	Rajakamangalam Thurai	2	62	3	67
31	3.1	Pillaihope	16	268	3	287
32	3.2	Muttom	40	673	122	835
33	3.3	James Nagar	0	0	0	0
34	3.4	Kaddiapattanam	110	701	254	1065
35	3.5	Chinnavilai	8	142	7	157
36	3.6	Periavilai	7	119	13	139
37	3.7	Puthoor	2	281	33	316
41	4.1	Kottilpadu	20	183	126	329
42	4.2	Colachel	423	593	101	1117
43	4.3	Simon Colony	19	159	7	185
44	4.4	Kodimunai	75	277	66	418
45	4.5	Vaniakudy	122	178	11	311
46	4.6	Kurumbanai	31	509	261	801
51	5.1	Midalam	0	46	17	63
52	5.2	Mel Midalam	0	46	16	62
53	5.3	Enayam	6	241	168	415
54	5.4	Puthenthura (2)	28	490	425	943
55	5.5	Ramanathurai	7	103	152	262
56	5.6	Thengapattanam	2	20	26	48
61	6.1	Erarnanthurai	1	7	36	44
62	6.2	Poothurai	20	56	40	116
63	6.3	Thoothoor	202	79	63	344
64	6.4	Chinnathurai	92	84	9	185

V ID*	Vcode*	Village name	B*	K*		Total*
65	6.5	Eraviputhenthurai	12	86	10	108
66	6.6	Vallavillai	27	7	312	346
67	6.7	Marthandathurai	8	95	214	317
68	6.8	Neerodi	7	95	382	484

* VID: Village identifier based on Vcode

Vcode: Village code according to CPDC

B: Number of boats in the villages (Source: Department of Fisheries, Nagercoil, 1998)

K: Number of Kattumarams in the village (Source: Department of Fisheries, Nagercoil, 1998)

V: Number of Vallams in the village (Source: Department of Fisheries, Nagercoil, 1998)

Total: Total number of crafts in the village

2d. Species Ranking

GID*	Rank 1*	Rank2	Rank3	Rank4	Rank 5	Rank6
BII	NA	NA	NA	NA	NA	NA
B12	Squid+ Cuttlefish	Rockcod	Grouper	Spotted Rock cod	Caranx	Barracuda
B13	Shrimp	Squid+ Cuttlefish	Shark	Grouper	Rock cod	Trevally
B14	NA	NA	NA	NA	NA	NA
B15	NA	NA	NA	NA	NA	NA
B16	NA	NA	NA	NA	NA	NA
B21	NA	NA	NA	NA	NA	NA
B22	NA	NA	NA	NA	NA	NA
B23	NA	NA	NA	NA	NA	NA
B24	NA	NA	NA	NA	NA	NA
B25	NA	NA	NA	NA	NA	NA
B26	NA	NA	NA	NA	NA	NA
B31	NA	NA	NA	NA	NA	NA
B32	NA	NA	NA	NA	NA	NA
B33	NA	NA	NA	NA	NA	NA
B34	Shrimp	Squid+ cuttlefish	Seer fish (Seela)	Seer fish	Grouper	No species
B35	NA	NA	NA	NA	NA	NA
B36	NA	NA	NA	NA	NA	NA
B37	NA	NA	NA	NA	NA	NA
B41	NA	NA	NA	NA	NA	NA

GID*	Rank 1*	Rank2	Rank3	Rank4	Rank5	Rank6
B42	Squid+ cuttlefish	Mackerel	Grouper	Emperor bream	Scad	Threadfin bream
B43	Squid+ cuttlefish	Grouper	Threadfin bream	Triggerfish	Scad	Barracuda
B44	Shrimp	Ribbon fish	Seer fish	Pornfret	Mackerel	Scad
B45	Squid+ cuttlefish	Shrimp	Shark	Grouper	Rock cod	No species
B46	Shrimp	Squid+ cuttlefish	Sardine	Anchovy	Grouper	No species
B51	NA	NA	NA	NA	NA	NA
B52	NA	NA	NA	NA	NA	NA
B53	NA	NA	NA	NA	NA	NA
B54	NA	NA	NA	NA	NA	NA
B55	NA	NA	NA	NA	NA	NA
B56	NA	NA	NA	NA	NA	NA
B61	NA	NA	NA	NA	NA	NA
B62	Shark	Tuna	Threadfin bream	Rock cod	Caranx	Sailfish
B63	Shark	Rock cod	Grouper	Threadfin bream	Spotted Rockcod	Tuna
B64	Shark	Tuna	Rock cod	Threadfin bream	Seer fish	Caranx
B65	Shark	No species	No species	No species	No species	No species
B66	Shark	No species	No species	No species	No species	No species
B67	Shark	No species	No species	No species	No species	No species
B68	NA	NA	NA	NA	NA	NA
K 11	Shrimp	Seer fish (seela)	Rock cod	Pornfret	Grouper	Sardine
K 12	Lobster	Shrimp	Squid+ cuttlefish	Seer fish	Seer fish (Seela)	Rock cod
K13	Shrimp	Squid+ cuttlefish	Seer fish	Shark	Sailfish	Caranx
K 14	Shrimp	Squid+ cuttlefish	seer fish	Grouper	Anchovy	Sardine
K15	Shrimp	Squid+ cuttlefish	Butterfish	Trevally	Grouper	Sardine
K16	Shrimp	Squid+ cuttlefish	Seerfish	Shark	Trevally	Anchovy
K21	Shrimp	Seer fish	Caranx	Leatherjacket	Squid+ cuttlefish	Grouper
K22	Seer fish (Seela)	Caranx	Halfbeak	Vella	Tuna	Threadfin bream

GID*	Rank 1*	Rank2	Rank3	Rank4	Rank5	Rank6
K23	Shrimp	Lobster	Squid+ cuttlefish	Seer fish	Tuna	No species
K24	Lobster	Shrimp	Tuna	Seer fish	Anchovy	Sardine
K25	Shrimp	Squid+ cuttlefish	Seer fish	Sardine	Anchovy	Silver belly
K26	Shrimp	Squid+ cuttlefish	Seer fish (Seela)	Whitefish	Trevally	Anchovy
K31	Shrimp	Seer fish	Ribbon fish	Sardine	Anchovy	Silver belly
K32	Lobster	Shrimp	Seer fish	Squid+ cuttlefish	Grouper	Trevally
K33	NA	NA	NA	NA	NA	NA
K34	Shrimp	Squid+ cuttlefish	Seer fish	Shark	Vella	Trevally
K35	Lobster	Shrimp	Squid+ cuttlefish	Seer fish	Vella	Caranx
K36	Shrimp	Squid+ cuttlefish	Rock cod	Grouper	Emperor bream	Vella
K37	Lobster	Shrimp	Squid+ cuttlefish	Seer fish	Grouper	Vella
K41	Shrimp	Squid+ cuttlefish	Seer fish	Grouper	Caranx	Sardine
K42	Shrimp	Squid+ cuttlefish	Seer fish	Vella	Trevally	Grouper
K43	Shrimp	Squid+ cuttlefish	Seer fish	Grouper	Emperor bream	Rockcod
K44	Shrimp	Squid+ cuttlefish	Seer fish	Grouper	Sardine	Anchovy
K45	Shrimp	Squid+ cuttlefish	Sardine	Anchovy	Whitefish	Ribbonfish
K46	Shrimp	Squid+ cuttlefish	Seer fish	Pomfret	Grouper	Whitefish
K51	Shrimp	Squid+ cuttlefish	Seer fish	Tuna	Mackerel	Sardine
K52	Shrimp	Squid+ cuttlefish	Seer fish	Whitefish	Sardine	Anchovy
K53	Shrimp	Shark	Seer fish	Tuna	Sardine	Anchovy
K54	Shrimp	Seer fish	Elagatis (Jack)	Caranx	Spotted Rockcod	Tuna
K55	Sardine	Anchovy	Tuna	Mackerel	Seer fish	Triggerfish
K56	Shrimp	Sardine	Mackerel	Tuna	Seer fish	Ribbonfish
K61	Anchovy	Sardine	Mackerel	Shrimp	Squid+ cuttlefish	Ribbon fish

GID*	Rank 1*	Rank2	Rank3	Rank4	Rank5	Rank6
K62	Sardine	Anchovy	Shrimp	Squid+ cuttlefish	Mackerel	Sardine
K63	Mackerel	Scad	Sardine	Anchovy cuttlefish	Squid+	Shrimp
K64	Mackerel	Anchovy	Sardine	Shrimp	Squid+ cuttlefish	Tuna
K65	Anchovey	Squid+ cuttlefish	Triggerfish	Scad	Tuna	Shrimp
K66	Tuna	Mackerel	Scad	Threadfin bream	Sardine	Anchovy
K67	Triggerfish	Mackerel	Scad	Tuna	Sardine	Anchovy
K68	Squid+ cuttlefish	Mackerel	Sardine	Anchovy	Scad	Tuna
V11	Shrimp	Lobster	Squid+ cuttlefish	Grouper	Caranx	Trevally
V12	Shrimp	Lobster	Seerfish (Seela)	Rockcod	Squid+ cuttlefish	Nospecies
V13	Shrimp	Seer fish (Seela)	Caranx	Grouper	Rockcod	No species
V14	NA	NA	NA	NA	NA	NA
V15	NA	NA	NA	NA	NA	NA
V16	Seer fish	Shrimp	Squid+ cuttlefish	Grouper	Trevally	Tuna
V21	NA	NA	NA	NA	NA	NA
V22	NA	NA	NA	NA	NA	NA
V23	NA	NA	NA	NA	NA	NA
V24	NA	NA	NA	NA	NA	NA
V25	NA	NA	NA	NA	NA	NA
V26	NA	NA	NA	NA	NA	NA
V31	NA	NA	NA	NA	NA	NA
V32	Shrimp	Lobster	Seer fish	Squid+ cuttlefish	Rock cod	No species
V33	NA	NA	NA	NA	NA	NA
V34	Shrimp	Squid+ cuttlefish	Seer fish	Rockcod	Tuna	Grouper
V35	NA	NA	NA	NA	NA	NA
V36	NA	NA	NA	NA	NA	NA
V37	Shrimp	Squid+ cuttlefish	Tuna	Seer fish	Caranx	Grouper
V41	NA	NA	NA	NA	NA	NA
V42	Shrimp	Squid+ cuttlefish	Seer fish	Tuna	Caranx	Vella

GID*	Rank 1*	Rank2	Rank3	Rank4	Rank5	Rank6
V43	Shrimp	Seer fish	Tuna	Elagatis(Jack)	Barracuda	Vella
V44	NA	NA	NA	NA	NA	NA
V45	NA	NA	NA	NA	NA	NA
V46	Squid+ cuttlefish	Shrimp	Grouper	Rock cod	Seer fish	Barracuda
V51	NA	NA	NA	NA	NA	NA
V52	Shrimp	Squid+ cuttlefish	Shark	Seer fish	Pomfret	Vella
V53	Shrimp	Squid+ cuttlefish	Seer fish	Pomfret	Tuna	Elagatis (Jack)
V54	Shrimp	Seer fish	Rockcod	Caranx	Squid+ cuttlefish	Barracuda
V55	Shrimp	Squid+	Seer fish	Grouper	Rock cod	Caranx
V56	Mackerel	Caranx	Rockcod	Tuna	Shrimp	Squid+ cuttlefish
V61	Tuna	Seerfish	Mackerel	Scad	Caranx	Ribbon fish
V62	Shrimp	Tuna	Rockcod	Threadfin bream	Caranx	Barracuda
V63	Grouper	Rock cod	Caranx	Threadfin brean	Tuna	Seer fish
V64	Tuna	Mackerel	Squid+ cuttlefish	Shrimp	Rock cod	Scad
V65	Shrimp	Tuna	Threadfin bream	Hardtailsad	Seer fish	Scad
V66	Tuna	Mackerel	Scad	Hardtailsad	Caranx	Threadfin bream
V67	Rock cod	Threadfin bream	Elagatis (Jack)	Caranx	Tuna	Sailfish
V68	Tuna	Seer fish	Mackerel	Shrimp	Flatfish	Squid+ cuttlefish

G ID: Fishermen group identifier based on village identifier plus type of vessel

Rank 1: Most important species (Rank 2,3, etc.)

NA: Not applicable (Fishermen group does not exist in the village)

No species: No other species were mentioned by the fishermen

NOTE: Squid and Cuttlefish are grouped as one

2e. Gear Ranking

GID*	Rank 1*	Rank2	Rank3	Rank4	Rank5	Rank6
B11	NA	NA	NA	NA	NA	NA
B12	Trawl net	Longline	Handline	No gear	No gear	No gear
B13	Trawl net	Longline	Handline	No gear	No gear	No gear
B14	NA	NA	NA	NA	NA	NA
B15	NA	NA	NA	NA	NA	NA
B16	NA	NA	NA	NA	NA	NA
B21	NA	NA	NA	NA	NA	NA
B22	NA	NA	NA	NA	NA	NA
323	NA	NA	NA	NA	NA	NA
B24	NA	NA	NA	NA	NA	NA
325	NA	NA	NA	NA	NA	NA
B26	NA	NA	NA	NA	NA	NA
331	NA	NA	NA	NA	NA	NA
B32	NA	NA	NA	NA	NA	NA
B33	NA	NA	NA	NA	NA	NA
B34	Trammel net	Disco rope net	Trawl net	Trolling line	Longline	Handline
B35	NA	NA	NA	NA	NA	NA
B36	NA	NA	NA	NA	NA	NA
B37	NA	NA	NA	NA	NA	NA
B41	NA	NA	NA	NA	NA	NA
B42	Scoop net	No gear	No gear	No gear	No gear	No gear
B43	Scoop net	No gear	No gear	No gear	No gear	No gear
B44	Scoop net	Handline	Trammel net	No gear	No gear	No gear
B45	Drift net	Handline	Trammel net	No gear	No gear	No gear
B46	Trawl net	Trammel net	No gear	No gear	No gear	No gear
B51	NA	NA	NA	NA	NA	NA
B52	NA	NA	NA	NA	NA	NA
B53	NA	NA	NA	NA	NA	NA
B54	NA	NA	NA	NA	NA	NA
B55	NA	NA	NA	NA	NA	NA
B56	NA	NA	NA	NA	NA	NA
B61	NA	NA	NA	NA	NA	NA
B62	Longline	Handline	Drift net	Trolling line	Monofilament net	No gear
B63	Longline	Drift net	Handline	Trolling line	No gear	No gear
B64	Longline	Drift net	Handline	No gear	Nogear	No gear

GID*	Rank 1*	Rank 2	Rank 3	Rank 4	Rank 5	Rank 6
B65	Longline	No near	No gear	No gear	No gear	No gear
B66	Longline	No gear	No gear	No gear	No gear	No gear
B67	Longline	No gear	No gear	No gear	No gear	No gear
B68	NA	NA	NA	NA	NA	NA
K 11	Sardine net	Drift net (small)	Longline	Trolling line	Handline	Monofilament net
K 12	Sardine net	Lobster net	Bottom set gill net	Longline	Handline	Boat seine
K 13	Monofilament net	Sardine net	Trolling line	Trammel net	Handline	Longline
K14	Sardine net	Anchovy net	Monofilament net	Trammel net	Trolling line	Handline
K 15	Longline	Handline	Bottom set gill net	Trammel net	Sardine net	Anchovy net
K16	Longline	Trammel net	Monofilament net	Anchovy net	Handline	No gear
K21	Anchovy net	Longline	Handline	Monofilament net	Drift net	Bottom set gill net
K22	Handline	Disco line	No gear	No gear	No gear	No gear
K23	Sardine net	Monofilament net	Drift net	Trammel net	Anchovy net	Bottom set gill net
K24	Anchovy net	Sardine net	Drift net	Monofilament net	Trammel net	Bottom set gill net
K25	Monofilament net	Boat seine	Anchovy net	Trammel net	Longline	Handline
K26	Rope net	Monofilament net	Anchovy net	Sardine net	Boat seine	Handline
K31	Anchovy net	Sardine net	Trammel net	Monofilament net	Boat seine	Handline
K32	Handline	Trammel net	Longline	Anchovy net	Monofilament net	No gear
K33	NA	NA	NA	NA	NA	NA
K34	Trammel net	Handline	Disco fish	Drift net	Mackerel net	No gear
K35	Handline	Trammel net	Monofilament net	Trolling net	Longline	No gear
K36	Trammel net	Monofilament net	Disco fish	Handline	Anchovy net	Sardine net
K37	Sardine net	Longline	Handline	Mackerel net	Trammel net	Anchovy net
K41	Trammel net	Handline	Trolling Line	Sardine net	Anchovy net	Roll net
K42	Handline	Longline	Trammel net	Trolling line	Disco fish	Anchovy net
K43	Handline	Drift net	Trammel net	Longline	Trolling line	Sardine net
K44	Handline	Trammel net	Longline	Drift net	Sardine net	Anchovy net

GID*	Rank 1*	Rank2	Rank3	Rank4	Rank5	Rank6
K45	Trammel net	Anchovy net	Sardine net	Disco net	Boat seine	No gear
K46	Trammel net	Handline	Drift net	Monofilament net	Sardine net	Anchovy net
K51	Monofilament net	Trammel net	Handline	Beach seine	Boat seine	Sardine net
K52	Trammel net	Handline	Sardine net	Anchovy net	Monofilament net	Trolling line
K53	Trammel net	Prawn net	Longline	Handline	Anchovy net	Sardine net
K54	Trammel net	Mackerel net	Sardine net	Handline	Scoop net	Monofilament net
K55	Anchovy net	Sardine net	Mackerel net	Roll net	Longline	Beach seine
K56	Handline	Trammel net	Monofilament net	Sardine net	Anchovy net	Drift net (big)
K61	Anchovy net	Sardine net	Shrimp net	Trammel net	Handline (jig)	Boat seine
K62	Sardine net	Anchovy net	Prawn net	Handline	Trammel net	Mackerel net
K63	Sardine net	Anchovy net	Mackerel net	Handline	Trammel net	Monofilament net
K64	Anchovy net	Prawn net	Mackerel net	Trammel net	Boat seine	Sardine net
K65	Handline(jig)	Longline	Anchovy net	Sardine net	Scoop net	Boat seine
K66	Handline	Mackerel net	Roll net	Sardine net	Anchovy net	Trammel net
K67	Handline	Scoop net	Sardine net	Anchovy net	Mackerel net	Trammel net
K68	Handline	Monofilament net	Mackerel net	Sardine net	Anchovy net	Trammel net
V11	Trammel net	Sardine net	Drift net(small)	Longline	Handline	Bottom set gill net
V12	Monofilament net	Trammel net	Longline	Handline	Trolling line	Drift net
V13	Sardine net	Drift net	Handline	Mackerel net	Longline	Trolling line
V14	NA	NA	NA	NA	NA	NA
V15	NA	NA	NA	NA	NA	NA
V16	Longline	Handline	Trammel net	Monofilament net	Drift net	Shark line
V21	NA	NA	NA	NA	NA	NA
V22	NA	NA	NA	NA	NA	NA
V23	NA	NA	NA	NA	NA	NA
V24	NA	NA	NA	NA	NA	NA
V25	NA	NA	NA	NA	NA	NA
V26	NA	NA	NA	NA	NA	NA
V31	NA	NA	NA	NA	NA	NA
V32	Drift net	Light fishing	Handline	Longline	Trammel net	Bottom set gill net

GID*	Rank 1*	Rank2	Rank3	Rank4	Rank5	Rank6
V33	NA	NA	NA	NA	NA	NA
V34	Disco fish	Drift net	Trammel net	Bottom set gill net	Longline	Handline
V35	NA	NA	NA	NA	NA	NA
V36	NA	NA	NA	NA	NA	NA
V37	Trammel net	Longline	Handline	Mackerel net	Monofilament net	No gear
V41	NA	NA	NA	NA	NA	NA
V42	Trammel net	Handline	Longline	Trolling line	Drift net	Disco net
V43	Drift net	Trammel net	Mackerel net	Handline	Longline	Trolling line
V44	NA	NA	NA	NA	NA	NA
V45	NA	NA	NA	NA	NA	NA
V46	Handline	Trammel net	Drift net	No gear	No gear	No gear
V51	NA	NA	NA	NA	NA	NA
V52	Trammel net	Handline	Longline	Sardine net	Anchovy net	Drift net
V53	Trammel net	Prawn net	Handline	Drift net	Anchovy net	Boat seine
V54	Trammel net	Mackerel net	Handline	Drift net	Longline	Trolling line
V55	Trammel net	Disco line	Handline	Longline	Drift net	Scoop net
V56	Mackerel net	Longline	Trammel net	Disco line	Handline(RT)	No gear
V61	Longline	Handline	Trolling line	Trammel net	Boat seine	No gear
V62	Handline(M)	Trammel net	Trolling line	Driftnet	Mackerel net	Longline
V63	Longline	Trolling line	No gear	No gear	No gear	No gear
V64	Mackerel net	Trammel net	Drift net	Longline	Trolling line	Disco line
V65	Handline	Longline	Anchovy net	sardine net	Drift net	Trammel net
V66	Drift net	Handline	Mackerel net	Trammel net	Longline	No gear
V67	Longline	Handline	Mackerel net	No gear	No gear	No gear
V68	Drift net	Mackerel net	Monofilament net	Light fishing	Handline	Trammel net

* GID: Fishermen group identifier based on village identifier plus type of vessel

Rank 1 Most important gear (rank 2,3,etc.)

NA: Not applicable (Fishermen group does not exist in the village)

No gear: No other gear was mentioned by the fishermen

2f. Species and Gear

GRID*	Species	Gear		
B121	Squid+cuttlefish	Trawl net	Handline	Longline
BI22	Rockcod	Trawl net	Handline	Longline
B123	Grouper	Trawl net	Handline	Longline
B124	Spotted Rockcod	Trawl net	Handline	Longline
B125	Caranx	Trawl net	Handline	Longline
B126	Barracuda (Neduvai)	Trawl net	Handline	Longline
B131	Shrimp	Trawl net		
B132	Squid+cuttlefish	Trawl net		
BI33	Shark	Trawl net	Handline	Longline
B134	Grouper	Trawl net	Handline	Longline
B135	Rockcod	Trawl net	Handline	Longline
B136	Trevally	Trawl net	Handline	Longline
B34I	Shrimp	Trammel net		
B342	Squid+cuttlefish	Disco rope net		
B343	Seer fish(Seela)	Trawl net	Longline	
B344	Seer fish	Handline		
B345	Grouper	Trawl net	Longline	
B421	Squid+cuttlefish	Scoop net		
B422	Mackerel	Scoop net		
B423	Grouper	Scoop net		
B424	Emperor bream	Scoop net		
B425	Scad	Scoop net		
B426	Threadfin bream	Scoop net		
B431	Squid+cuttlefish	Scoop net		
B432	Grouper	Scoop net		
B433	Threadfin bream	Scoop net		
B434	Triggerfish	Scoop net		
B435	Scad	Scoop net		
B436	Barracuda	Scoop net		
B441	Shrimp	Trammel net		
B442	Ribbon fish	Scoop net		
B443	Seer fish	Handline		
B444	Pomfret	Scoop net		
B445	Mackerel	Scoop net		
B446	Scad	Scoop net		

GRID*	Species	Gear		
B451	Squid+cuttlefish	Handline		
B452	Shrimp	Trammel net		
B453	Shark	Drift net	Handline	
B454	Grouper	Handline		
B455	Rockcod	Handline		
B461	Shrimp	Trammel net		
B462	Squid+cuttlefish	Trawl net		
B463	Sardine	Trawl net		
B464	Anchovy	Trawl net		
B465	Grouper	Trawl net		
B621	Shark	Longline		
B622	Tuna	Trolling line	Handline	
B623	Threadfin bream	Handline	Monofilament net	
B624	Rockcod	Handline	Monofilament net	
B625	Caranx	Longline		
B626	Sail fish	Drifinet		
B631	Shark	Longline	Drift net	
B632	Rockcod	Longline	Trolling line	
B633	Grouper	Longline	Handline	Trolling Line
B634	Threadfin bream	Longline	Handline	Trolling Line
B635	Spotted Rock cod	Longline	Handline	Trolling Line
B636	Tuna	Driftnet		
B641	Shark	Longline	Drift net	
B642	Tuna	Longline	Drift net	
B643	Rockcod	Longline	Drift net	
B644	Threadfin bream	Longline	Handline	
B645	Seer fish	Longline	Drift net	
B646	Caranx	Longline	Drift net	
B651	Shark	Longline		
B661	Shark	Longline		
B671	Shark	Longline		
K111	Shrimp	Trammelnet		
K1 12	Seer fish(Seela)	Handline	Longline	Drift net
K1 13	Rockcod	Handline		
K1 14	Pomfret	Monofilament net		
K115	Grouper	Monofilamentnet	Handline	

GRID*	Species	Gear			
K1 16	Sardine	Sardine net			
K121	Lobster	Lobster net			
K122	Shrimp	Trammel net			
K123	Squid+cuttlefish	Handline	Scoop net		
K124	Seer fish	Handline	Drift net	Trollingl ine	Longline
K125	Seer fish(Seela)	Trolling line			
K126	Rock cod	Handline	Bottom set gill net	Longline	
K131	Shrimp	Trammel net			
K132	Squid+cuttlefish	Handline	Trammel net		
K133	Seer fish	Handline	Trolling line	Longline	
K134	Shark	Trolling line			
K135	Sail fish	Handline			
K136	Caranx	Handline	Trolling line		
K141	Shrimp	Trammel net			
K142	Squid+cuttlefish	Handline			
K143	Seer fish	Handline	Trolling line		
K144	Grouper	Monofilament net	Trolling line		
K145	Anchovy	Anchovy net			
K146	Sardine	Sardine net			
K151	Shrimp	Trammel net			
K152	Squid+cuttlefish	Handline	Disco fish		
K153	Butter fish	Bottom set gill net			
K154	Trevally	Handline	Bottom set gill net		
K155	Grouper	Handline	Bottom set gill net	Longline	
K156	Sardine	Sardine net			
K161	Shrimp	Trammel net			
K162	Squid+cuttlefish	Handline			
K163	Seer fish	Handline			
K164	Shark	Longline			
K165	Trevally	Handline	Monofilament net		
K166	Anchovy	Anchovy net			
K211	Shrimp	Trammel net			
K212	Seerfish	Handline			
K213	Caranx	Handline			
K214	Leather Jacket	Handline			

GRID*	Species	Gear		
K2 15	Squid+cuttlefish	Handline		
K216	Grouper	Handline	Longline	Bottom set gill net
K22 1	Seer fish(seela)	Handline		
K222	Caranx	Handline		
K223	Half beak	Handline		
K224	Vella	Handline		
K225	Tuna	Handline		
K226	Threadfin bream	Handline		
K231	Shrimp	Trammel net	Monofilament net	
K232	Lobster	Bottom set gill net		
K233	Squid+cuttlefish	Monofilament net	Handline	
K234	Seer fish	Drift net		
K235	Tuna	Drift net		
K241	Lobster	Bottom set gill net		
K242	Shrimp	Trammel net		
K243	Tuna	Drift net		
K244	Seer fish	Drift net		
K245	Anchovy	Anchovy net		
K246	Sardine	Sardine net	Anchovy net	
K251	Shrimp	Trammel net		
K252	Squid+cuttlefish	Handline		
K253	Seer fish	Handline		
K254	Sardine	Sardine net		
K255	Anchovy	Anchovy net	Boat seine	
K256	Silver belly	Beach seine	Boat seine	
K261	Shrimp	Rope net		
K262	Squid+cuttlefish	Handline		
K263	Seer fish(seela)	Handline	Rope net	
K264	White fish	Boat seine	Rope net	
K265	Trevally	Boat seine	Monofilament net	
K266	Anchovy	Anchovy net		
K3 11	Shrimp	Trammel net		
K312	Seerfish	Handline	Beach seine	
K3 13	Ribbon fish	Boat seine		

GRID*	Species	Gear			
K3 14	Sardine	Sardine net			
K31 5	Anchovy	Anchovy net			
K3 16	Silver belly	Beach seine			
K321	Lobster	Bottom set gill net			
K322	Shrimp	Trammel net			
K323	Seer fish	Handline	Longline	Trolling line	
K324	Squid+cuttlefish	Trammel net	Handline		
K325	Grouper	Longline	Handline	Bottom set gill net	Monofilament net
K326	Trevally	Handline	Longline	Monofilament net	
K341	Shrimp	Trammelnet			
K342	Squid+cuttlefish	Disco fish	Trammel net		
K343	Seer fish	Handline	Drift net		
K344	Shark	Handline	Sharkline		
K345	Vella	Handline	Trammel net		
K346	Trevally	Handline	Trammel net		
K351	Lobster	Trammel net			
K352	Shrimp	Trammel net			
K353	Squid+cuttlefish	Handline			
K354	Seer fish	Handline	Longline	Trolling line	
K355	Vella	Handline	Longline	Trolling line	
K356	Caranx	Handline	Longline	Trolling line	
K361	Shrimp	Trammel net			
K362	Squid+cuttlefish	Disco fish	Handline		
K363	Rock cod	Handline			
K364	Grouper	Handline			
K365	Emperor bream	Handline			
K366	Vella	Beach seine			
K371	Lobster	Trammel net			
K372	Shrimp	Trammel net			
K373	Squid+cuttlefish	Handline			
K374	Seer fish	Handline	Drift net	Trammel net	
K375	Grouper	Longline	Trammel net	Handline	
K376	Vella	Handline	Trammel net		
K411	Shrimp	Trammel net			
K412	Squid+cuttlefish	Handline			

GRID*	Species		Gear	
K413	Seer fish	Handline	Trolling line	Rol net
K414	Grouper	Handline	Rol net	
K4 15	Caranx	Handline		
K416	Sardine	Sardine net		
K421	Shrimp	Trammel net		
K422	Squid+cuttlefish	Handline	Disco fish	
K423	Seer fish	Handline	Trolling line	
K424	Vella	Handline	Longline	
K425	Trevally	Handline	Longline	
K426	Grouper	Handline	Longline	
K431	Shrimp	Trammel net		
K432	Squid+cuttlefish	Handline		
K433	Seer fish	Handline	Drift net	Trolling line
K434	Grouper	Handline	Longline	
K435	Emperor bream	Handline	Longline	
K436	Rockcod	Handline	Longline	
K441	Shrimp	Trammel net		
K442	Squid+cuttlefish	Handline	Disco fish	
K443	Seer fish	Handline	Drift net	
K444	Grouper	Handline		
K44	Sardine	Sardine net		
K446	Anchovy	Anchovy net		
K451	Shrimp	Trammel net		
K452	Squid+cuttlefish	Disco line		
K453	Sardine	Sardine net		
K454	Anchovy	Anchovy net		
K455	White fish	Boat seine		
K456	Ribbon fish	Boat seine		
K461	Shrimp	Trammel net		
K462	Squid+cuttlefish	Handline		
K463	Seer fish	Drift net	Handline	
K464	Pomfret	Drift net		
K465	Grouper	Handline		
K466	Whitefish	Trammel net		
K511	Shrimp	Disco line		

GRID*	Species	Gear		
K5 12	Squid+cuttlefish	Handline		
K5 13	Seer fish	Beach seine		
K514	Tuna	Disco line	Monofilament net	
K515	Mackerel	Sardinenet	Monofilamentnet	
K516	Sardine	Trammel net		
K521	Shrimp	Handline		
K522	Squid+cuttlefish	Handline	Trolling line	
K523	seer fish	Handline	Trolling line	
K524	Whitefish	Monofilament net	Handline	
K525	Sardine (Keerimeen)	Sardine net		
K526	Anchovy	Anchovy net		
K531	Shrimp	Trammel net	Prawn net	
K532	Shark	Handline	Longline	
K533	Seer fish	Handline	Longline	
K534	Tuna	Handline	Longline	
K535	Sardine	Sardine net		
K536	Anchovy	Anchovy net		
K541	Shrimp	Trammel net		
K542	Seer fish	Handline		
K543	Elagatis(Jack)	Handline		
K544	Caranx	Handline		
K545	Spotted Rock cod	Handline		
K546	Tuna	Handline	Mackerel net	
K551	Sardine	Sardine net		
K552	Anchovy	Anchovy net		
K553	Tuna	Longline	Mackerel net	
K554	Mackerel	Mackerel net	Longline	
K555	Seer fish	Karavalai		
K556	Trigger fish	Longline		
K561	Shrimp	Trammel net		
K562	Sardine	Sardine net		
K563	Mackerel	Anchovy net	Sardine net	Monofilament net
K564	Tuna	Sardine net	Monofilament net	Handline
K565	Seer fish	Drift net(big)	Handline	
K566	Ribbon fish	Boat seine		

GRID*	Species	Gear		
K611	Anchovy	Anchovy net		
K612	Sardine	Sardine net		
K613	Mackerel	Shrimp net		
K614	Shrimp	Trammel net		
K615	Squid+cuttlefish	Handline(jig)		
K616	Ribbon fish	Boat seine		
K621	Sardine	Sardine net		
K622	Anchovy	Anchovy net		
K623	Shrimp	Prawn net	Trammel net	
K624	Squid+cuttlefish	Handline		
K625	Mackerel	Mackerel net	Handline	
K626	Sardine(Keerimeen)	Sardine net		
K631	Mackerel	Mackerel net		
K632	Scad	Handline(m)		
K633	Sardine	Sardine net		
K634	Anchovy	Anchovy net		
K635	Squid+cuttlefish	Handline		
K636	Shrimp	Trammel net		
K641	Mackerel	Mackerel net		
K642	Anchovy	Anchovy net		
K643	Sardine	Sardine net		
K644	Shrimp	Trammel net		
K645	Squid+cuttlefish	Boat seine	Handline	
K646	Tuna	Drift net		
K651	Anchovy	Anchovy net	Boat seine	
K652	Squid+cuttlefish	Handline(jig)		
K653	Trigger fish	Scoop net		
K654	Scad	Handline	Sardine net	
K655	Tuna	Handline	Mackerel net	
K656	Shrimp	Trammel net		
K661	Tuna	Handline		
K662	Mackerel	Mackerel net	Shrimp net	Handline
K663	Scad	Handline	Sardine net	Anchovy net
K664	Threadfin bream	Handline		
K665	Sardine	Sardine net		
K666	Anchovy	Anchovy net		

GRID*	Species	Gear			
K671	Trigger fish	Scoop net	Handline		
k672	Mackerel	Mackerel net	Handline		
K673	Scad	Handline			
K674	Tuna	Mackerel net	Handline		
K675	Sardine	Sardine net	Handline		
K676	Anchovy	Anchovy net	Hand line		
K681	Squid+cuttlefish	Handline			
K682	Mackerel	Mackerel net			
K683	Sardine	Sardine net			
K684	Anchovy	Anchovy net			
K685	Scad	Handline	Light fishing		
K686	Tuna	Drift net			
V111	Shrimp	Trammel net			
V112	Lobster	Bottom set gill net			
V113	Squid+cuttlefish	Handline			
V114	Grouper	Longline	Bottom set gill net		
V115	Caranx	Handline	Longline		
V116	Trevally	Handline	Longline		
V121	Shrimp	Trammel net	Monofilament net		
V122	Lobster	Monofilament net	Drift net		
V123	Seer fish(Seela)	Drift net	Trolling line		
V124	Rock cod	Monofilament net	Handline	Longline	
V125	Squid+cuttlefish	Handline			
V131	Shrimp	Trammel net	Monofilament net		
V132	Seer fish(seela)	Handline	Drift net	Trolling line	
V133	Caranx	Handline	Monofilament net	Longline	
V134	Grouper	Handline	Monofilament net	Longline	Drift net
V135	Rockcod	Handline	Monofilament net	Drift net	
V161	Seer fish	Longline	Handline	Drift net	
V162	Shrimp	Trammel net			
V163	Squid+cuttlefish	Handline			
V164	Grouper	Handline	Longline	Drift net	
V165	Trevally	Handline	Longline	Drift net	
V166	Tuna	Longline	Handline	Monofilament net	Drift net
V321	Shrimp	Trammel net	Bottom set gill net		
V322	Lobster	Trammel net	Bottom set gill net		

GRID*	Species		Gear	
V323	Seer fish	Drift net	Handline	Light fishing
V324	Squid+cuttlefish	Disco fish	Light fishing	
V325	Rockcod	Longline	Light fishing	
V341	Shrimp	Trammel net		
V342	Squid+cuttlefish	Hand line	Disco fish	
V343	Seer fish	Drift net	Hand line	
V344	Rockcod	Handline	Longline	
V345	Tuna	Drift net		
V346	Grouper	Longline	Handline	Bottom set gill net
V371	Shrimp	Trammel net		
V372	Squid cuttlefish	Handline	Trammel net	
V373	Tuna	Longline	Mackerel net	
V374	Seer fish	Handline	Trammel net	
V375	Caraux	Longline	Trammel net	
V376	Grouper	Longline	Trammel net	
V421	Shrimp	Trammel net		
V422	Squid +cuttlefish	Handline		
V423	Seer fish	Disco fish	Handline	Drift net
V424	Tuna	Handline	Drift net	
V425	Caranx	Disco fish	Handline	
V426	Vella	Trolling tine	Handline	Drill net
V431	Shrimp	Trammel net		
V432	Seer fish	Drift net	Handline	Trolling Line Longline
V433	Tuna	Longline		
V434	Elagatis(jack)	Drift net		
V435	Barracuda(neduvai)	Handl ine		
V436	Vella	Handline		
V461	Squid+cuttlefish	Handline		
V462	Shrimp	Trammel net		
V463	Grouper	Handline		
V464	Rockcod	Handline		
V465	Seer fish	Handline	Drift net	
V466	Barracuda	Handline		
V521	Shrimp	Trammel net		
V522	Squid+cuttlefish	Handline		
V523	Shark	Handline	Longline	

GRID*	Species	Gear			
V524	Seer fish	Handline	Longline		
V525	Pomfret	Drift net			
V526	Vella	Drift net	Handline		
V531	Shrimp	Trammel net	Prawn net		
V532	Squid+cuttlefish	Handline			
V533	Seer fish	Handline	Drift net		
V534	Pomfret	Drift net			
V535	Tuna	Drift net	Handline		
V536	Elagatis(Jack)	Drift net	Handline	Longline	
V541	Shrimp	Trammel net			
V542	Seer fish	Handline	Mackerel net	Drift net	
V543	Rockcod	Longline	Mackerel net		
V544	Caranx	Longline			
V545	Squid+cuttlefish	Handline	Disco line		
V546	Barracuda	Handline			
V551	Shrimp	Trammel net			
V552	Squid+cuttlefish	Disco line			
V553	Seer fish	Drift net	Longline		
V554	Grouper	Longline			
V555	Rockcod	Longline			
V556	Caranx	Handline			
V561	Mackerel	Mackerel net			
V562	Caranx	Longline			
V563	Rockcod	Longline			
V564	Tuna	Longline			
V565	Shrimp	Trammel net			
V566	Squid+cuttlefish	Disco line			
V611	Tuna	Longline			
V612	Seer fish	Longline	Trolling line		
V613	Mackerel	Mackerel net			
V614	Scad	Handline			
V615	Caranx	Handline			
V616	Ribbonfish	Handline	Boat seine		
V621	Shrimp	Trammel net			
V622	Tuna	Drift net	Handline	Trolling line	Mackerel net
V623	Rockcod	Longline	Handline		

GRID*	Species	Gear			
V624	Threadfin bream	Longline	Handline		
V625	Caranx	Longline	Handline		
V626	Barracuda	Drift net	Handline	Longline	Trolling line
V631	Grouper	Longline	Trolling line		
V632	Rockcod	Longline	Trolling line		
V633	Caranx	Longline	Trolling line		
V634	Threadfin bream	Longline	Trolling line		
V635	Tuna	Longline	Trolling line		
V636	Seer fish	Longline	Trolling line		
V641	Tuna	Mackerel net	Drift net	Trolling line	
V642	Mackerel	Mackerel net	Longline	Handline	
V643	Squid+cuttlefish	Disco line			
V644	Shrimp	Trammel net			
V645	Rockcod	Longline			
V646	Scad	Handline			
V651	Shrimp	Trammel net			
V652	Tuna	Drift net	Handline	Longline	
V653	Threadfin bream	Handline			
V654	Hardtailscad	Mackerel net	Handline		
V655	Seer fish	Longline	Drift net		
V656	Scad	Handline			
V661	Tuna	Drift net	Handline		
V662	Mackerel	Mackerel net			
V663	Scad	Handline	Mackerel net		
V664	Hardtailscad	Handline	Drift net		
V665	Caranx	Handline	Longline		
V666	Threadfin bream	Trammel net			
V671 |	Rockcod	Longline	Handline		
V672	Threadfin bream	Handline	Longline		
V673	Elagatis(Jack)	Longline			
V674	Caranx	Longline			
V675	Tuna	Longline	Handline		
V676	Sailfish	Handline			
V681	Tuna	Drift net	Handline		
V682	Seer fish	Drift net	Handline		
V683	Mackerel	Mackerel net	Handline	Monofilament net	

GRID*	Species	Gear	
V684	Shrimp	Trammel net	
V685	Flatfish	Trammel net	
V686	Squid±cuttlefish	Handline(jig)	Monofilament net

* GRID: Group Rank Identifier, which is based on the group identifier plus a rank number, corresponding with the species ranking (see also Annex Id: Species Ranking)

2g. Season and Range

GRS ID*	Species*	J*	F	M	A	M	J	J	A	S	O	N	D	Range from*	Range to*
B121S	S-C													Colachel	Arokiapuram
B122S	Rock cod													Colachel	Arokiapuram
B123S	Grouper													Colachel	Arokiapuram
B124S	SpRockcod													Colachel	Arokiapuram
B125S	Caranx													Colachel	Arokiapuram
B126S	Barracuda (N)													Colachel	Arokiapuram
B131OS	Shrimp													Muttom	Arokiapuram
BI3IS	Shrimp													Muttom	Arokiapuram
B132S	S-C													Muttom	Arokiapuram
B133OS	Shark													Muttom	Arokiapuram
B133S	Shark													Muttom	Arokiapuram
B134S	Grouper													Muttom	Arokiapuram
B135S	Rockcod													Muttom	Arokiapuram
B136S	Trevally													Muttom	Arokiapuram
B342OS	S-C													Neerodi	Manakudy
B342S	S-C													Neerodi	Manakudy
B343S	Seer fish (S)													Colachel	Rajakamangalam
B344S	Seer fish													Colachel	Rajakamangalam
B345OS	Grouper													KK	Arokiapuram
B345S	Grouper													Neerodi	KK
B421S	S-C													Neerodi	KK
B422OS	Mackerel													Neerodi	KK
B422S	Mackerel													Neerodi	KK
B423OS	Grouper													Neerodi	KK
B423S	Grouper													Neerodi	KK
B424OS	Emperor Br													Neerodi	KK
B424S	Emperor Br													Neerodi	KK

GRS ID*	Species*	J*	F	M	A	M	J	J	A	S	O	N	D	Range from*	Range to*
B425OS	Scad													Neerodi	KK
B425S	Scad													Neerodi	KK
B426OS	Threadfin Br													Neerodi	KK
B426S	Threadfin Br													Neerodi	KK
B431S	S-C													Neerodi	Arokiapuram
B432S	Grouper													Neerodi	Arokiapuram
B433S	Threadfin Br													Neerodi	Arokiapuram
B434S	Triggerfish													Neerodi	Arokiapuram
B435S	Scad													Neerodi	Arokiapuram
B436S	Barracuda													Neerodi	Arokiapuram
B441OS	Shrimp													Neerodi	Kodimunai
B441S	Shrimp													Neerodi	Arokiapuram
B442OS	Ribbon fish													Kodimunai	Kodimunai
B442S	Ribbon fish													Kurumbanai	Colachel
B444S	Pomfret													Neerodi	KK
B445OS	Mackerel													Kurumbanai	Colachel
B445S	Mackerel													Enayam	Muttom
B446OS	Scad													Kurumbanai	Colachel
B446S	Scad													Kurumbanai	Colachel
B451S	S-C													Neerodi	Arokiapuram
B452S	Shrimp													Neerodi	Arokiapuram
B453S	Shark													Neerodi	Arokiapuram
B454S	Grouper													Neerodi	Arokiapuram
B455S	Rockcod													Neerodi	Arokiapuram
B461OS	Shrimp													Neerodi	KK
B461S	Shrimp													Neerodi	KK
B462OS	S-C													Neerodi	KK
B462S	S-C													Neerodi	KK
B463OS	Sardine													Neerodi	KK
B463S	Sardine													Neerodi	KK
B464OS	Anchovy													Neerodi	KK
B464S	Anchovy													Neerodi	KK
B465OS	Grouper													Neerodi	KK
B465S	Grouper													Neerodi	KK
B621S	Shark													Neerodi	Arokiapuram
B622S	Tuna													Neerodi	Arokiapuram

GRS ID*	Species*	J*	F	M	A	M	J	J	A	S	O	N	D	Range from*	Range to*
B623S	Threadin Br									.	.	.		Neerodi	Arokiapuram
B624S	Rockcod					.					.	.		Neerodi	Arokiapuram
B625S	Cararix									.	.	.	.	Neerodi	Arokiapuram
B626S	Sailfish											.		Neerodi	Arokiapuram
B631OS	Shark									.	.	.		Neerodi	Arokiapuram
B631S	Shark	.	.	.	.	.	.	.	.				.	Neerodi	Arokiapuram
B632OS	Rockcod													Thoothoor	KK
B632S	Rockcod											.		Thoothoor	KK
B633OS	Grouper													Thoothoor	KK
B633S	Grouper													Thoothoor	KK
B634OS	Threadfin Br													Neerodi	KK
B634S	Threadfin Br												.	Neerodi	KK
B635OS	Sp Rockcod													Thoothoor	KK
B635S	Sp Rockcod	.		.								.	.	Thoothoor	KK
B636OS	Tuna	.										.	.	Neerodi	KK
B636S	Tuna						.	.	.	.	.			Neerodi	KK
B641S	Shark													Neerodi	KK
B642OS	Tuna	.	.	.							.		.	Neerodi	KK
B642S	Tuna													Neerodi	KK
B643OS	Rockcod					.								Neerodi	Arokiapuram
B643S	Rockcod											.	.	Neerodi	Arokiapuram
B644OS	Threadfin Br					.								Neerodi	Arokiapuram
B644S	Threadfin Br	.		.	.							.	.	Neerodi	Arokiapuram
B645OS	Seer fish										.			Neerodi	KK
B645S	Seer fish													Neerodi	KK
B646OS	Caranx					.								Neerodi	Arokiapuram
B646S	Caranx	.	.	.	.							.	.	Neerodi	Arokiapuram
B651S	Shark	.	.	.	.							.	.	Neerodi	KK
B661S	Shark													Neerodi	Arokiapuram
B671OS	Shark		.	.	.	.	.	.	.	.				Neerodi	KK
B671S	Shark	.									.	.	.	Neerodi	Arokiapuram
K111OS	Shrimp							.	.					Kovalam	Arokiapuram
K111S	Shrimp						.	.						Kovalam	Arokiapuram
K112OS	Seer fish (S)												.	Arokiapuram	Arokiapuram
K112S	Seer fish (S)									.	.			Arokiapuram	Arokiapuram
K113OS	Rockcod												.	Arokiapuram	Arokiapuram

GRS ID*	Species*	J*	F	M	A	M	J	J	A	S	O	N	D	Range from*	Range to*
K113S	Rockcod													Kovalam	Arokiapuram
K114OS	Pomfret													KK	Arokiapuram
K114S	Pomfret													KK	Arokiapuram
K115OS	Grouper													Arokiapuram	Arokiapuram
K115S	Grouper													Arokiapuram	Arokiapuram
K116OS	Sardine													Arokiapuram	Arokiapuram
K116S	Sardine													Arokiapuram	Arokiapuram
K121OS	Lobster													Chinnamuttom	Chinnamuttom
K121S	Lobster													Chinnamuttom	Chinnamuttom
K122OS	Shrimp													KK	Arokiapuram
K122S	Shrimp													KK	Arokiapuram
K123OS	S-C													Kovalam	Chinnamuttom
K123S	S-C													Kovalam	Chinnamuttom
K124OS	Seer fish													KK	KK
K124S	Seer fish													KK	KK
K125OS	Seerfish(S)													KK	KK
K125S	Seerfish(S)													KK	KK
K126OS	Rockcod													KK	KK
K126S	Rockcod													KK	KK
K131OS	Shrimp													KK	KK
K131S	Shrimp													Pallam	Arokiapuram
K132OS	S-C													Colachel	KK
K132S	S-C													Colachel	KK
K133OS	Seer fish													KK	KK
K133S	Seerfish													KK	KK
K134OS	Shark													KK	KK
K134S	Shark													KK	KK
K135OS	Sailfish													KK	KK
K135S	Sailfish													KK	KK
K136OS	Caranx													KK	KK
K136S	Caranx													KK	KK
K141S	Shrimp													Manakudy	Arokiapuram
K142OS	S-C													Kovalam	Kovalam
K142S	S-C													Kovalam	Kovalam
K143OS	Seer fish													Pallam	Arokiapuram
K143S	Seer fish													Pallam	Arokiapuram

CRS ID*	Species*	J*	F	M	A	M	J	J	A	S	O	N	D	Range from*	Range to*
K144S	Grouper													Pallam	Arokiapuram
K145OS	Anchovy													Kovalam	Kovalam
K145S	Anchovy													Manakudy	Arokiapuram
K146S	Sardine													Kovalam	Kovalam
K15IOS	Shrimp													Manakudy	Kil-Manakudy
K15IS	Shrimp													Manakudy	Kil-Manakudy
K152OS	S-C													Manakudy	Kil-Manakudy
K152S	S-C													Manakudy	Kil-Manakudy
K153OS	Butterfish													Manakudy	Kil-Manakudy
K153S	Butterfish													Manakudy	Kil-Manakudy
K154S	Trevally													Manakudy	Kil-Manakudy
K155OS	Grouper													Kil-Manakudy	KK
K155S	Grouper													Kil-Manakudy	KK
K156OS	Sardine													Kil-Manakudy	KK
K156S	Sardine													Kil-Manakudy	KK
K161OS	Shrimp													Colachel	Arokiapuram
K161S	Shrimp													Colachel	Arokiapuram
K162OS	S-C													Colachel	Arokiapuram
K162S	S-C													Colachel	Arokiapuram
K163OS	Seer fish													Manakudy	Manakudy
K163S	Seerfish													Manakudy	Manakudy
K164S	Shark													Manakudy	Manakudy
K165OS	Trevally													Manakudy	Manakudy
K165S	Trevally													Manakudy	Manakudy
K166OS	Anchovy													Manakudy	Manakudy
K166S	Anchovy													Manakudy	Manakudy
K211OS	Shrimp													Pallam	Pallam
K211S	Shrimp													Pallam	Pallam
K212OS	Seer fish													Pallam	Pallam
K212S	Seer fish													Pallam	Pallam
K213OS	Caranx													Pallam	Pallam
K213S	Caranx													Pallam	Pallam
K214OS	Leather Jacket													Pallam	Pallam
K214S	Leather Jacket													Pallam	Pallam
K215OS	S-C													Pallam	Pallam
K215S	S-C													Pallam	Pallam

GRS ID*	Species*	J*	F	M	A	M	J	J	A	S	O	N	D	Range from*	Range to*
K216OS	Grouper													Pallam	Pallam
K216S	Grouper													Pallam	Pallam
K221 OS	Seer fish (S)													Periakadu	Manakudy
K221S	Seer fish (5)													Periakadu	Manakudy
K222OS	Caranx													Periakadu	Manakudy
K222S	Caranx													Periakadu	Manakudy
K223OS	Halfbeak													Periakadu	Manakudy
K223S	Halfbeak													Periakadu	Manakudy
K224OS	Vella													Periakadu	Manakudy
K224S	Vella													Periakadu	Manakudy
K225S	Tuna													Periakadu	Manakudy
K226OS	Threadfin Br													Periakadu	Puthenthurai
K226S	Threadfin Br													Periakadu	Puthenthurai
K231OS	Shrimp													Rajakamangalam	Kesavanputhen Thurai
K231S	Shrimp													Colachel	KK
K232OS	Lobster													Kesavanputhen Thurai	Kesavanputhen Thurai
K232S	Lobster													Kesavanputhen Thurai	Kesavanputhen Thurai
K233S	S-C													Kesavanputhen Thurai	Kesavanputhen Thurai
K234OS	Seer fish													Colachel	Arokiapuram
K234S	Seer fish													Colachel	Arokiapuram
K235OS	Tuna													Colachel	Arokiapuram
K235S	Tuna													Colachel	Arokiapuram
K241OS	Lobster													Periakadu	Puthenthurai
K241S	Lobster													Periakadu	Puthenthurai
K242OS	Shrim p													Periakadu	Puthenthurai
K242S	Shrimp													Periakadu	Puthenthurai
K243S	Tuna													Colachel	KK
K244OS	Seer fish													Colachel	KK
K244S	Seer fish													Colachel	KK
K245OS	Anchovy													Rajakamangalam	Periakadu
K245S	Anchovy													Pozhikarai	Pozhikarai
K246OS	Sardine													Rajakamangalam	Kovalam
K246S	Sardine													Rajakamangalam	Kovalam

GRS ID*	Species*	J*	F	M	A	M	J	J	A	S	O	N	D	Range from*	Range to*
K251OS	Shrimp													Periakadu	Periakadu
K251S	Shrimp													Rajakamangalam	Pozhikarai
K252OS	S-C													Periakadu	Periakadu
K252S	S-C													Rajakamangalam	Pozhikarai
K253S	Seer fish													Periakadu	Periakadu
K254OS	Sardine													Pillaihope	Kovalam
K254S	Sardine													Pillaihope	Kovalam
K25SOS	Anchovy													Pillaihope	Kovalam
K255S	Anchovy													Pillaihope	Kovalam
K256OS	Silver belly													Periakadu	Periakadu
K256S	Silver belly													Periakadu	Periakadu
K261OS	Shrimp													Rajakamangalam	Rajakamangalam
K261S	Shrimp													Pillaihope	Pozhikarai
K262OS	S-C													Rajakamangalam	Periakadu
K262S	S-C													Rajakamangalam	Periakadu
K263OS	Seer fish (S)													Rajakamangalam	Periakadu
K263S	Seer fish (S)													Rajakamangalam	Periakadu
K264OS	Whitefish													Rajakamangalam	Pozhikarai
K264S	Whitefish													Pillaihope	Periakadu
K265OS	Trevally													Pillaihope	Pozhikarai
K265S	Trevally													Pillaihope	Pozhikarai
K266OS	Anchovy													Rajakamangalam	Rajakamangalam
K266S	Anchovy													Pillaihope	Pozhikarai
K311S	Shrimp													Puthoor	Rajakamangalam
K312OS	Seer fish													Puthenthurai (2)	KK
K312S	Seerfish													Puthenthurai (2)	KK
K313OS	Ribbon fish													Puthoor	Periakadu
K313S	Ribbon fish													Puthoor	Periakadu
K314OS	Sardine													Kaddiapattanam	Rajakamangalam
K314S	Sardine													Kaddiapattanam	Rajakamangalam
K315OS	Anchovy													Kaddiapattanam	Rajakamangalam
K315S	Anchovy													Kaddiapattanam	Rajakamangalam
K316OS	Silver belly													Pillaihope	Pillaihope
K316S	Silverbelly													Pillaihope	Pillaihope
K321OS	Lobster													Muttom	Muttom
K321S	Lobster													Muttom	Muttom

GRS ID*	Species*	J*	F	M	A	M	J	J	A	S	O	N	D	Range from*	Range to*
K322OS	Shrimp													Muttom	Muttom
K322S	Shrimp													Puthoor	Rajakamangalam
K323OS	Seer fish													Muttom	Muttom
K323S	Seer fish													Puthoor	Rajakamangalam
K324OS	S-C													Muttom	Muttom
K324S	S-C													Puthoor	Rajakamangalam
K325OS	Grouper													Kaddiapattanam	Muttom
K325S	Grouper													Kaddiapattanam	Muttom
K326OS	Trevally													Kaddiapattanam	Muttom
K326S	Trevally													Kaddiapattanam	Muttom
K341OS	Shrimp													Kottilpadu	Pillaihope
K341S	Shrimp													Kottilpadu	Pillaihope
K342OS	S-C													Colachel	Pillaihope
K342S	S-C													Colachel	Pillaihope
K343OS	Seer fish													Kaddiapattanam	Kaddiapattanam
K343S	Seer fish													Cotachel	Pallam
K344S	Shark													Colachel	KK
K345OS	Vella													Colachel	Pillaihope
K345S	Vella													Colachel	Pillaihope
K346OS	Trevally													Kaddiapattanam	Kaddiapattanam
K346S	Trevally													Kaddiapattanam	Kaddiapattanam
K351OS	Lobster													Chinnavilai	Chinnavilai
K351S	Lobster													Chinnavilai	Chinnavilai
K352OS	Shrimp													Colachel	Kaddiapattanam
K352S	Shrimp													Colachel	Kaddiapattanam
K353OS	S-C													Chinnavilai	Chinnavilai
K353S	S-C													Chinnavilai	Chinnavilai
K354OS	Seer fish													Chinnavilai	Chinnavilai
K354S	Seer fish													Chinnavilai	Chinnavilai
K355OS	Vella													Chinnavilai	Chinnavilai
K355S	Vella													Chinnavilai	Chinnavilai
K356OS	Caranx													Chinnavilai	Chinnavilai
K356S	Caranx													Chinnavilai	Chinnavilai
K361OS	Shrimp													Colachel	Kaddiapattanam
K361S	Shrimp													Colachel	Kaddiapattanam
K362OS	S-C													Puthoor	Chinnavilai

GRS ID*	Species*	J*	F	M	A	M	J	J	A	S	O	N	D	Range from*	Range to*
K362S	S-C													Puthoor	Chinnavilai
K363OS	Rockcod										.			Puthoor	Chinnavilai
K363S	Rockcod													Puthoor	Chinnavilai
K364OS	Grouper										.			Puthoor	Chinnavilai
K364S	Grouper													Puthoor	Chinnavilai
K365OS	Emperor Br										.			Periavilai	Periavilai
K365S	Emperor Br								.					Periavilai	Periavilai
K366OS	Vella													Periavilai	Periavilai
K366S	Vetla													Periavilai	Periavilai
K371OS	Lobster													Puthoor	Puthoor
K371S	Lobster													Puthoor	Puthoor
K3 72OS	Shrimp													Kurumbanai	Kaddiapattanam
K3 72S	Shrimp													Kurumbanai	Kaddiapattanam
K373OS	S-C													Colachet	Kaddiapattanam
K3 73S	S-C													Colachet	Kaddiapattanam
K364OS	Seer fish													Colachel	Kaddiapattanam
K374S	Seer fish													Cotachel	Kaddiapattanam
K375OS	Grouper													Kurumbanai	Pallam
K375S	Grouper													Colachel	Kaddiapattanam
K3 76OS	Vella													Cotachel	Kaddiapattanam
K376S	Vella													Colachel	Kaddiapattanam
K41 10S	Shrimp													Colachel	Kaddiapattanam
K41 1S	Shrimp													Enayam	Periavilai
K412OS	S-C													Colachel	Periavilai
K412S	S-C													Colachel	Periavilai
K4 13OS	Seer fish													Colachel	Periavilai
K4 13S	Seer fish	.												Colachel	Periavilai
K414S	Grouper										.			Colachel	Periavilai
K4 15OS	Caranx													Colachel	Periavilai
K415S	Caranx													Colachel	Periavilai
K4 16OS	Sardine													Colachel	Puthoor
K416S	Sardine													Colachel	Puthoor
K421OS	Shrimp													Colachel	Colachel
K42 1 S	Shrimp													Kurumbanai	Puthoor
K422OS	S-C													Enayam	Muttom
K422S	S-C													Thengapattanam	Muttom

GRS ID*	Species*	J*	F	M	A	M	J	J	A	S	O	N	D	Range from*	Range to*
K423OS	Seer fish													• Colachel	Colachel
K423S	Seer fish									•	•			Thengapattanam	Muttom
K424OS	Vella									•	•			Colachel	Colachel
K424S	Vella	•	•											Enayam	Kaddiapattanam
K425OS	Trevally									•	•			Colachel	Colachel
K425S	Trevally						•	•						Thengapattanam	Kaddiapattanam
K426OS	Grouper											•		Colachel	Colachel
K426S	Grouper							•	•					Puthenthurai (2)	Muttom
K431OS	Shrimp													Neerodi	Muttom
K431S	Shrimp							•	•					Neerodi	KK
K432OS	S-C	•	•											Kodimunai	Muttom
K432S	S-C						•	•	•					Kodimunai	Muttom
K433OS	Seer fish												•	Kodimunai	Muttom
K433S	Seer fish									•				Kodimunai	Muttom
K434OS	Grouper	•	•											Kodimunai	KK
K434S	Grouper									•				Kodimunai	KK
K435OS	Emperor Br	•	•	•										Kodimunai	KK
K435S	Emperor Br						•	•	•					Kodimunai	KK
K436OS	Rockcod	•	•	•										Kodimunai	KK
K436S	Rockcod						•	•	•					Kodimunai	KK
K441OS	Shrimp										•			Vaniakudy	Colachel
K441S	Shrimp						•	•	•					Thengapattanam	Kottilpadu
K442OS	S-C				•									Vaniakudy	Colachel
K442S	S-C	•	•											Vaniakudy	Colachel
K443OS	Seer fish													Kodimunai	Kodimunai
K443S	Seer fish	•											•	Neerodi	Colachel
K444OS	Grouper													Kodimunai	Kodimunai
K444S	Grouper									•	•			Kodimunai	Kodimunai
K445OS	Sardine	•	•											Kodimunai	Kodimunai
K445S	Sardine													Kodimunai	Kodimunai
K446OS	Anchovy													Kodimunai	Kodimunai
K446S	Anchovy					•	•	•						Kodimunai	Kodimunai
K451OS	Shrimp									•	•			Enayam	Muttom
K451S	Shrimp						•	•	•					Enayam	Muttom
K452OS	S-C									•	•			Enayam	Muttom
K452S	S-c							•	•					Enayam	Muttom

GRS ID*	Species*	J*	F	M	A	M	J	J	A	S	O	N	D	Range from*	Range to*
K453OS	Sardine												.	Vaniakudy	Vaniakudy
K453S	Sardine													Enayam	Colachel
K454OS	Anchovy										.	.		Vaniakudy	Vaniakudy
<i>K454S</i>	Anchovy													Thengapattanam	Muttom
K455OS	Whitefish													Thengapattanam	Kottilpadu
<i>K455S</i>	Whitefish													Thengapattanam	Kottilpadu
<i>K456OS</i>	Ribbon fish											.		Vaniakudy	Vaniakudy
K456S	Ribbon fish													Ramanthurai	Kottilpadu
K461OS	Shrimp													Enayam	KK
K46IS	Shrimp													Enayam	KK
K462OS	S-C											.		Kurumbanai	Kurumbanai
K462S	S-C													Thoothoor	Muttom
K463OS	Seer fish											.	.	Kurumbanai	Kurumbanai
K463S	Seer fish													Thoothoor	Muttom
K464OS	Pomfret											.	.	Kurumbanai	Kurumbanai
K464S	Pomfret													Enayam	KK
K465OS	Grouper													Kurumbanai	Kurumbanai
<i>K465S</i>	Grouper					.	.							Thoothoor	KK
K466OS	Whitefish													Kurumbanai	Kurumbanai
K466S	Whitefish													Kurumbanai	Kurumbanai
K511OS	Shrimp													Neerodi	Neerodi
<i>K51IS</i>	Shrimp													Neerodi	Neerodi
K512OS	S-C			.									.	Midalam	Midalam
K512S	S-C													Midalam	Midalam
K513OS	Seer fish	.												Midalam	Midalam
K513S	Seer fish												.	Midalam	Midalam
K514S	Tuna											.		Midalam	Midalam
K515OS	Mackerel													Midalam	Midalam
K515S	Mackerel	.	.											Midalam	Midalam
K516OS	Sardine													Midalam	Midalam
K516S	Sardine													Midalam	Midalam
K521OS	Shrimp													Enayam	Midalam
K521S	Shrimp						.	.						Mel Midalam	Mel Midalam
K522OS	S-C	.												Mel Midalam	Mel Midalam
K522S	S-C											.		Mel Midalam	Mel Midalam
K523OS	Seer fish													Enayam	Kurumbanai

GRS ID*	Species*	J*	F	M	A	M	J	J	A	S	O	N	D	Range from*	Range to*
K523S	Seer fish												.	Enayam	Kurumbanai
K524OS	Whitefish										.			Mel Midalam	Mel Midalam
K524S	Whitefish								.	.				Enayam	Midalam
K525OS	Sardine (K)							.	.					Thoothoor	Colachel
K525S	Sardine (K)												.	Thoothoor	Colachel
K526OS	Anchovy												.	Enayam	Kurumbanai
K526S	Anchovy												.	Thengapattanam	Colachel
K531OS	Shrimp					.			.					Thengapattanam	Midalam
K531S	Shrimp						.	.						Neerodi	Colachel
K532OS	Shark								.	.				Thengapattanam	Mel Midalam
K532S	Shark												.	Thengapattanam	Mel Midalam
K533S	Seer fish	.	.											Enayam	Enayam
K534OS	Tuna				.	.								Enayam	Enayam
K534S	Tuna	.	.	.										Enayam	Enayam
K535S	Sardine											.	.	Thengapattanam	Midalam
K536OS	Anchovy			.	.									Eramanthurai	Vaniakudy
K536S	Anchovy			.	.									Eramanthurai	Vaniakudy
K541OS	Shrimp								.					Poothurai	Midalam
K541S	Shrimp						.	.						Neerodi	Neerodi
K542OS	Seer fish	.											.	Puthenthurai (2)	Puthenthurai (2)
K542S	Seer fish								.	.	.			Puthenthurai (2)	Midalam
K543OS	Elagatis (Jak)	.											.	Puthenthurai (2)	Puthenthurai (2)
K543S	Elagatis (Jak)								.				.	Puthenthurai (2)	Midalam
K544S	Caranx	.	.	.	.	.	.	.	.	.	.	.	.	Puthenthurai (2)	Puthenthurai (2)
K545OS	Sp Rockcod										.		.	Puthenthurai (2)	Puthenthurai (2)
K545S	Sp Rockcod								.					Puthenthurai (2)	Puthenthurai (2)
K546OS	Tuna					.								Puthenthurai (2)	Puthenthurai (2)
K546S	Tuna	.	.	.	.	.							.	Puthenthurai (2)	Puthenthurai (2)
K551OS	Sardine													Thengapattanam	Ramanthurai
K551S	Sardine					.								Poothurai	Enayam
K552OS	Anchovy							.						Eramanthurai	Colachel
K552S	Anchovy					.								Thoothoor	Colachel
K553OS	Tuna							.	.					Ramanthurai	Ramanthurai
K553S	Tuna					.	.							Poothurai	Midalam
K554OS	Mackerel													Ramanthurai	Ramanthurai
K554S	Mackerel	.	.											Eramanthurai	Midalam

GRS ID*	Species*	J*	F	M	A	M	J	J	A	S	O	N	D	Range from*	Range to*
K555OS	Seer fish											.	.	Ramanthurai	Ramanthurai
K555S	Seer fish								.	.	.			Ramanthurai	Ramanthurai
K556OS	Triggerfish			.										Ramanthurai	Ramanthurai
K556S	Triggerfish													Ranianthurai	Ramanthurai
K561 OS	Shrimp													Thengapattanam	Thengapattanam
K561S	Shrimp					.	.	.						Neerodi	KK
K562OS	Sardine							.	.	.	.			Thengapattanam	Thengapattanam
K562S	Sardine													Thengapattanam	Thengapattanam
K563OS	Mackerel													Thengapattanan	Thengapattanan
K563S	Mackerel													Thengapattanan	Thengapattanan
K564OS	Tuna													Thengapattanan	Thengapattanan
K564S	Tuna											.	.	Thengapattanan	Thengapattanan
565S	Seer fish											.	.	Poothurai	Enayam
K566S	Ribbon fish						.	.						Thengapattanan	Thengapattanan
K61 IOS	Anchovy												.	Poothurai	Enayam
K61 IS	Anchovy													Vallavillai	Enayam
K612OS	Sardine													Poothurai	Enayam
K612S	Sardine													Vallavillai	Enayam
K613S	Mackerel						.		.				.	Thoothoor	Enayam
K614O5	Shrimp													Poothurai	Thengapattanan
K614S	Shrimp						.		.					Thoothoor	Enayam
K615OS	S-C									.	.			Neero4i	Enayam
K615S	S-C								.					Neerodi	Enayam
K616OS	Ribbon fish													Vallavillai	Enayam
K616S	Ribbon fish						.		.					Vallavillai	Enayam
K621OS	Sardine						.	.	.					Thoothoor	Poothurai
K621S	Sardine													Neerodi	Enayam
K622OS	Anchovy					.	.	.						Poothurai	Poothurai
K622S	Anchovy													Neerodi	Enayam
K623OS	Shrimp													Thoothoor	Eramanthurai
K623S	Shrimp						.	.	.					Chinnathurai	Thengapattanan
K624OS	S-C					.	.							Vallavillai	Enayam
K624S	S-C													Poothurai	Poothurai
K625OS	Mackerel						.							Vallavillai	Enayam
K625S	Mackerel												.	Vallavillai	Enayam
K626OS	Sardine (K)													Vallavillai	Enayam

GRS ID*	Species*	J*	F	M	A	M	J	J	A	S	O	N	D	Range from*	Range to*
K626S	Sardine (K)													Vallavillai	Enayam
K631OS	Mackerel									.	.	.		Chinnathurai	Poothurai
K63 IS	Mackerel													Marthandathurai	Enayam
K632OS	Scad									.	.	.		Chinnathurai	Poothurai
K632S	Scad													Marthandathurai	Enayam
K633OS	Sardine													Chinnathurai	Poothurai
K633S	Sardine						.	.						Vallavillai	Eramanthurai
K634S	Anchovy													Chinnathurai	Poothurai
K635OS	S-C													Thoothoor	Thoothoor
K635S	S-C									.	.	.		Thoothoor	Thoothoor
K636OS	Shrimp													Marthandathurai	Enayam
K636S	Shrimp													Marthandathurai	Enayam
K64 IS	Mackerel													Neerodi	Eramanthurai
K642OS	Anchovy													Neerodi	Eramanthurai
K642S	Anchovy													Neerodi	Eramanthurai
K643OS	Sardine													Neerodi	Eramanthurai
K643 S	Sardine													Neerodi	Eramanthurai
K644OS	Shrimp													Neerodi	Eramanthurai
K644S	Shrimp													Neerodi	Eramanthurai
K645OS	S-C									.	.			Neerodi	Eramanthurai
K645S	S-C													Neerodi	Eramanthurai
K646OS	Tuna									.	.	.		Neerodi	Eramanthurai
K646S	Tuna													Neerodi	Eramanthurai
K651OS	Anchovy													Neerodi	Colachel
K651S	Anchovy											.	.	Neerodi	Ramanthurai
K652OS	S-C									.	.			Neerodi	Colachel
K652S	S-C													Neerodi	Ramanthurai
K653OS	Triggerfish													Neerodi	Enayam
K653S	Triggerfish											.	.	Neerodi	Enayam
K654S	Scad													Neerodi	Enayam
K655S	Tuna													Neerodi	Muttom
K656S	Shrimp													Marthandathurai	Eraviputhenthurai
K661OS	Tuna												.	Neerodi	Colachel
K66 IS	Tuna													Vallavillai	Vallavillai
K662OS	Mackerel													Neerodi	Colachel
K662S	Mackerel													Vallavillai	Vallavillai

GRS ID*	Species*	3*	F	M	A	M	J	J	A	S	O	N	D	Range from*	Range to*
K663OS	Scad						.	.	.					Neerodi	Colachel
K663S	Scad	.	.									.	.	Vallavillai	Vallavillai
K664S	Threadfin Br					.	.	.						Vallavillai	Vallavillai
K665OS	Sardine	.	.	.										Neerodi	Colachel
K665S	Sardine				.	.	.	.						Vallavillai	Vallavillai
K666OS	Anchovy		.	.										Neerodi	Colachel
K666S	Anchovy								.	.	.	.	.	Vallavillai	Vallavillai
K671OS	Triggerfish						.	.	.					Neerodi	Vallavillai
K671S	Triggerfish		.	.	.									Neerodi	Vallavillai
K672OS	Mackerel						.	.	.					Marthandathurai	Marthandathurai
K672S	Mackerel				.	.								Neerodi	Thengapattanan
K673S	Scad	.	.	.										Neerodi	Thoothoor
K674S	Tuna	.	.	.	.	.	.	.	.	.	.	.	.	Neerodi	Thengapattanan
K675S	Sardine							.	.					Marthandathurai	Marthandathurai
K676S	Anchovy							.	.	.				Neerodi	Vallavillai
K681OS	S-C												.	Neerodi	Eramanthurai
K681S	S-C								.	.	.			Neerodi	Eramanthurai
K682S	Mackerel						.	.	.					Neerodi	Eramanthurai
K683S	Sardine	.	.										.	Neerodi	Puthenthurai (2)
K684S	Anchovy						.	.	.					Neerodi	Puthenthurai (2)
K685S	Scad	.	.	.									.	Neerodi	Chinnathurai
K686OS	Tuna	.											.	Neerodi	Marthandathurai
K686S	Tuna			.	.									Neerodi	Marthandathurai
V1 11S	Shrimp						.	.	.					Rajakamangalam	Arokiapuram
V1 12S	Lobster												.	Arokiapuram	Arokiapuram
V1 13S	S-C								.	.				Manakudy	Arokiapuram
V1 14OS	Grouper													Arokiapuram	Arokiapuram
V1 14S	Grouper	.		.										KK	Arokiapuram
V1 15OS	Caranx	.	.											Arokiapuram	Arokiapuram
V1 15S	Caranx													Arokiapuram	Arokiapuram
V1 16OS	Trevally	.	.											Arokiapuram	Arokiapuram
V1 16S	Trevally				.	.								Arokiapuram	Arokiapuram
V121OS	Shrimp									.				Chinnamuttom	Chinnamuttom
V121S	Shrimp						.	.						Rajakamangalam	Arokiapuram
V122S	Lobster	.....									.	.	.	Chinnamuttom	Chinnamuttom
V123OS	Seer fish (S)											.		Rajakamangalam	Arokiapuram

GRS ID*	Species*	3*	F	M	A	M	J	J	A	S	O	N	D	Range from*	Range to*
V 123S	Seer fish (S)									-	-			Rajakamangalam	Arokiapuram
VI 24S	Rockcod													Rajakamangalam	Arokiapuram
V 125OS	S-C									-	-			KK	Chinnamuttom
V 125S	S-C													KK	Chinnamuttom
V 131OS	Shrimp											.	.	KK	KK
V 1315	Shrimp													Manakudy	Arokiapuram
VI 32OS	Seer fish (S)													Muttom	Arokiapuram
V 132S	Seer fish (S)											.		Muttom	Arokiapuram
V 133OS	Caranx													Muttom	Arokiapuram
V 133S	Caranx											.	.	Muttom	Arokiapuram
V 134OS	Grouper											.	.	Manakudy	Arokiapuram
V 134S	Grouper													Manakudy	Arokiapuram
V 135OS	Rock cod										.		.	Muttom	Arokiapuram
V 135S	Rock cod													Muttom	Arokiapuram
VI 6IOS	Seer fish													Muttom	KK
V 161S	Seer fish	.												Muttom	KK
V 162S	Shrimp													Rajakamangalam	KK
V 163S	S-C													Manakudy	Manakudy
V 164OS	Grouper													Muttom	Arokiapuram
V 164S	Grouper													Muttom	Arokiapuram
V 165S	Trevally											.	.	Muttom	KK
V 166S	Tuna													Muttom	KK
V 32 10S	Shrimp													Neerodi	Chinnamuttom
V 321S	Shrimp													Enayam	KK
V 322OS	Lobster			.							.	.	.	Muttom	Muttom
V 322S	Lobster													Muttom	Muttom
V 323S	Seer fish													Enayam	KK
V 324OS	S-C													Muttom	Muttom
V 324S	S-C													Muttom	Muttom
V 325S	Rockcod											.	.	Kaddiapattanam	KK
V 341OS	Shrimp													Kaddiapattanam	Arokiapuram
V 342S	Shrimp													Puthenthurai (2)	Rajakamangalam
V 342OS	S-C									-	-			Neerodi	KK
V 342S	S-C													Neerodi	KK
V 343OS	Seer fish	.												Kaddiapattanam	Arokiapuram
V 343S	Seer fish										.	.	.	Kaddiapattanani	Kaddiapattanam

GRS ID*	Species*	3*	F	M	A	M	J	J	A	S	O	N	D	Range from*	Range to*
V344OS	Rock cod					.								Kaddiapattanam	KK
V344S	Rock cod	.	.											Kaddiapattanam	KK
V3450S	Tuna	.....											.	Kaddiapattanam	Kaddiapattanam
V344S	Tuna												.	Kaddiapattanam	Kaddiapattanam
V3460S	Grouper											.	.	Kaddiapattanam	Kaddiapattanam
V346S	Grouper						.	.	.	.				Kaddiapattanam	Kaddiapattanam
V3710S	Shrimp									.				Neerodi	KK
V371S	Shrimp						.							Neerodi	KK
V3720S	S-C										.			Neerodi	KK
V372S	S-C									.				Neerodi	KK
V373S	Tuna	.	.										.	Neerodi	KK
V3740S	Seer fish			.	.									Neerodi	KK
V374S	Seer fish	.	.											Neerodi	KK
V3750S	Caranx													Neerodi	KK
V375S	Caranx	.	.											Neerodi	KK
V3760S	Grouper										.	.		Puthoor	Puthoor
V376S	Grouper	.	.											Puthoor	Puthoor
V4210S	Shrimp								.					Neerodi	KK
V421S	Shrimp						.	.						Neerodi	KK
V4220S	S-C										.	.		Neerodi	Muttom
V422S	S-C								.	.				Neerodi	Muttom
V4230S	Seer fish												.	Kurumbanai	Puthoor
V423S	Seer fish										.			Kurumbanai	Puthoor
V4240S	Tuna						.	.						Kurumbanai	Puthoor
V424S	Tuna													Kurumbanai	Puthoor
V4250S	Caranx												.	Kurumbanai	Muttom
V425S	Caranx							.	.	.				Kurumbanai	Muttom
V4260S	Vella											.	.	Kurumbanai	Muttom
V426S	Vella								.					Kurumbanai	Muttom
V4310S	Shrimp									.				Kodimunai	Muttom
V431S	Shrimp						.	.	.					Neerodi	KK
V4320S	Seer fish	.	.											Enayam	Colachel
V432S	Seer fish						.		.					Neerodi	Colachel
V4330S	Tuna	.												Enayam	Colachel
V433S	Tuna						.	.						Thengapattanam	Arokiapuram
V4340S	Elagatis (Jack)													Enayam	Muttom

GRS ID*	Species*	J*	F	M	A	M	J	J	A	S	O	N	D	Range from*	Range to*
V434S	Elagatis (Jack)						.	.	.					Enayam	Muttom
V435OS	Barracuda (N)													Enayam	Muttom
V435S	Barracuda (N)						.	.	.					Enayam	Muttom
V436OS	Vella											.		Enayam	Muttom
V436S	Vella						.	.	.					Enayam	Muttom
V461OS	S-C											.	.	Neerodi	KK
V461S	S-C							.	.	.				Neerodi	KK
V462OS	Shrimp								.	.				Thengapattanam	Muttom
V462S	Shrimp						.	.						Thengapattanam	Muttom
V463OS	Grouper	.	.							.	.	.	.	Kurumbanai	Kurumbanai
V463S	Grouper							.	.					Neerodi	KK
V464OS	Rock cod													Kurumbanai	KK
V464S	Rock cod													Kurumbanai	Arokiapuram
V465OS	Seer fish								.	.				Kurumbanai	Colachel
V465S	Seer fish											.		Kurumbanai	Colachel
V466OS	Barracuda													Kurumbanai	Kurumbanai
V466S	Barracuda								.	.				Kurumbanai	Kurumbanai
V521OS	Shrimp									.				Mel Midalam	Mel Midalam
V521S	Shrimp						.	.	.					Neerodi	Colachel
V522OS	S+C								.	.				Mel Midalam	Mel Midalam
V522S	S+C						.	.						Neerodi	KK
V523OS	Shark		.	.										Mel Midalam	Mel Midalam
V523S	Shark	.												Neerodi	KK
V524OS	Seer fish									.				Mel Midalam	Mel Midalam
V524S	Seer fish					.								Mel Midalam	Mel Midalam
V525OS	Pomfret					.								Mel Midalam	Mel Midalam
V525S	Pomfret				.	.								Mel Midalam	Mel Midalam
V526OS	Vella						.							Mel Midalam	Mel Midalam
V526S	Vella				.									Mel Midalam	Mel Midalam
V531S	Shrimp							.	.					Neerodi	Muttom
V532S	S+C								.					Enayam	Enayam
V533S	Seer fish								.					Enayam	Enayam
V534S	Pomfret													Enayam	Enayam
V535S	Tuna	.	.	.	.		.				.	.	.	Enayam	Enayam
V536S	Elagatis (Jack)	.	.									.	.	Enayam	Enayam
V541OS	Shrimp								.					Thoothoor	Kurumbanai
V541S	Shrimp						.	.						Thoothoor	Kurumbanai

CRS ID*	Species*	J*	F	M	A	M	J	J	A	S	O	N	D	Range from*	Range to*
V542OS	Seer fish													Puthenthurai (2)	Puthenthurai (2)
V542S	Seer fish	.	.											Puthenthurai (2)	Puthenthurai (2)
V543OS	Rock cod				.									Puthenthurai (2)	KK
V543S	Rock cod	.	.	.										Puthenthurai (2)	KK
V544OS	Caranx				.	.								Puthenthurai (2)	Puthenthurai (2)
V544S	Caranx		.											Puthenthurai (2)	Puthenthurai (2)
V545OS	S+C												.	Puthenthurai (2)	Puthenthurai (2)
V545S	S+C													Puthenthurai (2)	Puthenthurai (2)
V546S	Barracuda									.	.			Puthenthurai (2)	Puthenthurai (2)
V551OS	Shrimp								.	.				Neerodi	Colachel
V551S	Shrimp						.	.						Neerodi	Colachel
V552OS	S+C												.	Ramanthurai	Ramanthurai
V552S	S+C									.	.			Neerodi	KK
V553OS	Seer fish							.	.					Ramanthurai	Ramanthurai
V553S	Seer fish					.								Neerodi	KK
V554OS	Grouper													Ramanthurai	Ramanthurai
V554S	Grouper													Eramanthurai	KK
V555OS	Rock cod					.								Eramanthurai	Midalam
V555S	Rock cod		.											Neerodi	KK
V556OS	Caranx													Ramanthurai	Ramanthurai
V556S	Caranx			.	.									Ramanthurai	Ramanthurai
V556IOS	Mackerel					.								Thengapattanam	Thengapattanam
V561S	Mackerel													Neerodi	KK
V562OS	Caranx													Thengapattanam	Thengapattanam
V562S	Caranx		.											Neerodi	Arokiapuram
V563OS	Rock cod													Thengapattanam	Thengapattanam
V563S	Rock cod								.	.				Thengapattanam	Thengapattanam
V564OS	Tuna				.									Thengapattanam	Thengapattanam
V564S	Tuna													Neerodi	KK
V565OS	Shrimp		.	.	.									Thengapattanam	Thengapattanam
V565S	Shrimp													Neerodi	Muttom
V566S	S-C									.	.			Neerodi	KK
V611OS	Tuna												.	Neerodi	Colachel
V611S	Tuna					.			.	.	.			Neerodi	KK
V612OS	Seer Fish	.	.	.	.	.								Neerodi	Colachel
V612S	Seer Fish									.	.			Neerodi	KK
V613OS	Mackerel													Neerodi	Midalam

CRS ID*	Species*	J*	F	M	A	M	J	J	A	S	O	N	U	Range from*	Range to*
V613S	Mackerel	.	.	.	.								.	Neerodi	Colachel
V614OS	Scad								.					Neerodi	Midalam
V614S	Scad	.					.	.						Neerodi	Colachel
V615OS	Caranx													Neerodi	Eramanthurai
V615S	Caranx	.	.	.	.									Neerodi	Eramanthurai
V616OS	Ribbon fish	.	.	.	.					.	.		.	Vallavillal	Enayam
V616S	Ribbon Fish				.									Vallavillai	Enayam
V621OS	Shrimp								.					Neerodi	Enayam
V621S	Shrimp													Neerodi	KK
V622OS	Tuna			.	.									Neerodi	Enayam
V622S	Tuna					.								Neerodi	Muttom
V623OS	Rock cod									.	.		.	Neerodi	Enayam
V623S	Rock cod								.	.				Neerodi	Muttom
V624S	Threadfin Br	.	.	.	.								.	Neerodi	Muttom
V625OS	Caranx													Poothurai	Colachel
V625S	Caranx	.	.		.									Poothurai	KK
V626OS	Barracuda											.	.	Poothurai	Enayam
V626S	Barracuda								.	.				Poothurai	Colachel
V631OS	Grouper													Neerodi	Enayam
V631S	Grouper	.			.							.	.	Neerodi	KK
V632OS	Rockcod													Neerodi	Enayam
V632S	Rockcod	.	.	.	.					.	.	.	.	Neerodi	KK
V633OS	Caranx													Neerodi	Enayam
V633S	Caranx	.	.	.	.				.	.	.	.	.	Neerodi	KK
V634OS	Treadfin Br													Neerodi	Enayam
V634S	Threadfin Br	.	.	.	.				.	.	.	.	.	Neerodi	KK
V635OS	Tuna													Neerodi	Enayam
V635S	Tuna	.	.	.	.				.	.	.	.	.	Neerodi	KK
V636OS	Seer Fish													Neerodi	Enayam
V636S	Seer Fish	.	.						.	.		.	.	Neerodi	KK
V641OS	Tuna	.	.	.	.				.	.	.	.	.	Neerodi	KK
V641S	Tuna													Neerodi	KK
V642OS	Mackerel									.	.			Neerodi	Eraviputhenthurai
V642S	Mackerel													Neerodi	Eraviputhenthurai
V643OS	S-C												.	Neerodi	Muttom
V643S	S-C								.		.			Neerodi	Muttom

GRS ID*	Species*	J*	F	M	A	M	J	J	A	S	O	N	D	Range from*	Range to*
V644S	Shrimp												Neerodi	Muttom	
V645S	Rockcod												Colachel	KK	
V646S	Scad												Neerodi	Eraviputhenthuri	
V651S	Shrimp												Vallavillai	Thoothoor	
V652S	Tuna												Neerodi	Arokiapuram	
V653S	Hardtailed						.						Neerodi	Arokiapuram	
V655OS	Seer Fish					.							Neerodi	Ariokiapuram	
V655S	Sear Fish						.	.					Neerodi	Ariokiapuram	
V661OS	Tuna									.	.		Vallavillai	Vallavillai	
V661S	Tuna									.	.		Neerodi	KK	
V662OS	Mackerel									.	.		Vallavillai	Vallavillai	
V662S	Mackerel												Neerodi	KK	
V663OS	Scad									.	.		Vallavillai	Vallavillai	
V663S	Scad												Neerodi	KK	
V664OS	flardtailscad									.	.		Vallavillai	Vallavillai	
V664S	Hardtailcad												Neerodi	KK	
V665OS	Caranx									.	.		Vallavillai	Vallavillai	
V665S	Caranx												Neerodi	KK	
V666OS	Threadfin Br									.	.		Vallavillai	Vallavillai	
V666S	Threadfin Br												Neerodi	KK	
V671OS	Rockcod												Neerodi	Muttom	
V671S	Rockcod	.								.	.		Neerodi	Arokiapuram	
V672OS	Threadfin Br												Neerodi	Muttom	
V672S	Threadfin Br	.								.	.		Neerodi	Arokiapuram	
V673S	Elagatis (Jack)	.	.	.	.	.				.	.		Neerodi	Muttom	
V674S	Caranx	.	.						.	.	.		Neerodi	Muttom	
V675S	Tuna									.	.		Neerodi	KK	
V676OS	Sailfish												Neerodi	Muttom	
V676S	Sailfish			.	.								Neerodi	Arokiapuram	
V681OS	Tuna	.											Neerodi	Colachel	
V681S	Tuna												Neerodi	KK	
V682S	Seer Fish							.	.	.	.		Neerodi	KK	
V683S	Mackerel												Neerodi	Neerodi	
V684S	Shrimp												Neerodi	Enayam	
V685S	Flatfish												Neerodi	Enayam	
V686S	S-C												Neerodi	KK	

- * ORD ID Group Rank Season identifier, or Group Rank identifier (GR ID) plus further classification into season and off-season
- Species Species that is fished
Indicates if January is considered as season (or off-season) of a particular species according to the fishermen (F = February etc.)
- Range from : Indicates the fishing area of the most western village to which the fishermen go for fishing
- Range to Indicates the fishing area of the most eastern village to which the fishermen go for fishing