Study of turtles, traditional practices and rights of fishermen in the Kerala coast and development of an education strategy for protecting the coastal biodiversity through a community based Turtle conservation programme.

Jayakumar C. , Dillepkumar N.

THANAL CONSERVATION ACTION AND INFORMATION NETWORK

September 2004

Contents

1.Acknowledgements

2.Introduction

3.Methodology

4.Objectives

5.Turtles and beaches the Kerala Coast survey results

6.The Peoples plan documents and turtles

7.The Coast, People, Environment and Conservation

8.Photographs

9.References

10.Anexures

1. Acknowledgements

We thank all for the opportunity, which we got to continue the work on the marine turtles and be in the coast. The team members have twice covered the coast of Kerala where ever there is an open beach with out sea walls and personally surveyed the area. We thank the local people who helped us in the survey. The space here do not permit us to list all of them but we acknowledge each of them for sharing their wisdom, knowledge and facts with us which gave us the direction in the work.

We wish to acknowledge the "theeram prakriti samrakshana samithi" for sharing their experience, problems and worries with us. Their struggle against odds to save the turtle inspired us. There are many new initiatives inspired by the work of "theeram" in Kolavippalam. This voluntary community initiative is the basis for the turtle conservation in the Kerala coast and we hope to see more community initiatives and due recognition to the youth of Kolavippalam.

We thank Dr. K Narayanan Nair, Programme Coordinator of the Kerala Research Programme for Local Level Development for his guidance and full support and inspiration given to us at all stages and always kindly putting our perspectives in the right track in a unique non violent way.

We also thank Dr. Christopher, Dr. P R Gopinathan Nair, Dr. Sreekumar Chathopadhyaya, Dr. Mridul Eapen , Dr. Vineetha Menon and Dr. T P Sreedharan individually and collectively they have been providing a lot of inspiration and motivation along with valuable guidance. We also acknowledge THANAL colleagues and the advisory board for the support and patience.

We acknowledge the support from Fisheries department, MATSYAFED, Kerala Forest Department, PCO, MNHS and other departments and organisations for the help and support.

Jayakumar C. & Dileepkumar N.

2. Introduction

The beaches of Kerala and the turtles that nest and visit are not acknowledged in the way it deserves. The turtles in the offshore are also not acknowledged. The anecdotes and stories and an occasional newspaper article were the story of the turtles in Kerala. The Kolavippalam effort to protect turtle by the community based and initiative "theeram " gave the turtle its long due space in the media and in the conservation efforts of the Kerala Forest Department. The turtles in the coast and sea are an untold story of the past, so is the richness of the traditions of the coast. This study was in search of the harmony of turtles and the traditions and the changes happened in the current times.

The attempt to come up with a tested education programme failed mainly due to the communal conflicts that came up in the study area. The study could compile a whole set of new details that will help the turtle conservation in future in terms of secondary data. A copy of the same has been given to the forest department officials and fisheries people. We could get a malayalam booklet made on the turtle and biology of the same. We have distributed this widely and hope to get responses from the people in the coast with more details

The project has triggered more community awareness and hope that the coming years will help to facilitate community based conservation efforts in more places in the Kerala coast. The challenges from the fisher folk in the community meetings have widened our understanding as well as the connect between the terrain of wilderness and the society. We got opportunity to widen our understanding on conflicts between wants and the needs, today and sustainability, cynicism and hope, responsibility and right, common an private and wisdom and fact

We want to be more hopeful about the coast, and the turtles bearing the flags for biodiversity conservation in the coast lead by the community and based in the community.

3. Methodology

The work involved primary and secondary data collection. All Libraries in Trivandrum, Central Marine Fisheries Research Institute (CMFRI) Vizhinjam station, Central Marine Fisheries Research Institute Kozhikode Station, Central Marine Fisheries Research Institute Kochi, Kerala Forrest Research Institute Thrissur, Kerala Agricultural university, Zoological Survey of India Kozhikode, State Archives, Programme for Community Organisation Thiruvananthapuram, MICTRA Kozhikode and all known research Institutes that deal with Oceans and coast was visited for secondary data collection and to talk to the researchers for guidance. This was followed by a survey, direct observations, interactions, interviews, discussions, surveys of fish catch, visits to markets and landings and interactions with community especially the fishermen.

A dossier on the marine turtles was compiled trade records, state manuals, travelogues, revenue records, journals, scientific reports and publications and such other sources were referred and the informations related to turtles on Kerala was compiled as a dossier. The general information was also added during tyeh revision as the wildlife department while discussion mentioned that could help them if all details are put together.

The peoples planing and other plan documents available from the coastal panchayaths were collected for review.

An education programme was formulated with an objective of sensitising the fishermen and the coastal community. Classes and programmes organised at various locations as part of the survey. The intensive programme was planned at Ponnani was changed as there was Sea wall and the turtle visits have come down drastically in the last one year. The youth club at Marad and one volunteer who did the survey helped us to develop a programme at the Kozhikode beach it was an interesting programme especially due to the challenge from the local fishermen who insisted in the public meetings to prove the worth of the turtle against the dying sea. The communal conflicts forced us to abandon the programme and could not

complete the activity and the same was an in complete work as part of the programme. The plan to revive the same in Thiruvananthapuram was also abandoned after two months as the conflicts were surfacing there also.

The consultation with wildlife and fisheries officials and the community people was postponed but is being planned as a new programme with the help of other NGOs and the departments in 2004.

4. Objectives

Objectives:

1. To compile a dossier on the marine turtles of Kerala as benchmark information.
2. To understand the skills and traditional practices of the fishermen community in conservation of the marine turtles
3. To develop an education programme on marine turtle to sensitise the community to take up turtle conservation programmes linking to protection of the coastal biodiversity.
4. To find out the dependence of Fishermen on marine turtles for sustenance

Project plan:

1st to 4th month	:	Literature survey, Reference work in libraries and archives developing questionnaire and field visits to select the sites for intensive observations.
5th to 17thd month	:	Field survey and Observations, Interactions with Community, Market survey, Questionnaire Survey and Interview Documentation of traditional practices and skills Developing the framework of education programme and field trial .
18th month	:	Data analysis, review of findings, interactions with community leaders and organisations, discussions on the findings with wildlife and fisheries Officials and Report writing.

5. Turtles and beaches the Kerala Coast survey results

The Kerala Coast

Kerala has a 590 km long coastal belt rich in biodiversity with a relatively narrow beach, broken at many places by rocks, sea walls, inlets and backwaters. The sea walls alone cover a total length of over 420 km. In most beaches, especially in the South after Ernakulam, the beaches are well populated with people living right on the coast. While the whole coast was covered in the study, this chapter enlists those beaches, which have reported the arrival of turtles for nesting. The study has assessed the viability of the beach for turtle conservation, and identified the threats for turtle survival. Some of the beaches described have very poor turtle arrival, especially towards the south of the State, but the local community's practices and attitude towards turtle have been a threatening factor, so they have also been enlisted. Many beaches surveyed were left out of this list because the beaches have become areas of intense activity or blocked by seawall. Each of these beaches has its own specific problems and needs specific responses from the side of the manager but the study has found very high potential for saving turtle nests and turtles in these beaches in the State.

The survey started from North Kerala and came down South. The listing is hence done district wise, and in order from North to South.

5.1KASARAGOD DISTRICT

Thalappady – Someswar Beach

It's the border of Kerala and Karnataka States. In between these beaches the Thalappady River joins the sea. Both beaches are devoid of sea walls. The beaches are narrow and bordered with casuarina trees. Pendanus are also seen near the beach. Here there are no fish landings. Fishing activity is mostly concentrated on the Kanwatheertha beach, south of this beach. The villagers said that plenty of turtles used to nest there, 10 years ago. But in recent years there isn't much nesting. According to villagers, they haven't seen any turtle nests in the recent past. Normally the fishermen don't take the eggs of turtles or capture them.

Kanwatheertha Beach

Kanwatheertha beach is situated in between Thalapady and Manjeswar beaches. This beach has the Thalapady river mouth to its north and Manjeswar river mouth to its south. It is more or less a narrow beach with out sea wall. Here the beach has erosion threat, aggravated by the intense mining of the foreshore sand for construction purpose mostly by the local people. This beach has a small fish-landing center. Turtles come to this shore mainly where human activity is less. Here the fishermen do not bother about the arrival of turtles. They neither take their eggs nor do they capture them. The fishermen say that they have seen hatchlings going back to the sea. If turtles get entangled in their nets during fishing, they let it off back to the sea.

Manjewaram Beach

The northern area of this beach is covered by sea wall, while its south by expanded rocks. So beaches are very narrow at some places. It is a major fish landing centre in North Kerala. Manjeswaram river joins the sea in this beach. It makes a beautiful inlet (Azhimugam) but now this inlet and the river has been subjected to a major damage by an Aqua Culture Farm Project of Malabar Aqua Farms Ltd. Inspite of this, there are some uninhibited stretches in the northern and southern part of this beach. Turtles nest there regularly. The fishermen do not bother about the turtles. They don't take the eggs of turtles nor do they capture them. Manjeswaram beach is heavily crowded beach with a large fishing village, fishing vessels and activity.

Uppala Beach

Uppala beach is located south of Manjeswar beach. This beach is considerably wide and many places are slightly sloped towards the sea. Uppala beach is devoid of sea walls and is bordered by casuarinas and pendanus. This beach have a small fish landing centre. Turtles are reported here, though in small numbers. Here people relish turtle eggs, so they take the eggs if they see the nests. Last year too, one of them who were interviewed had taken the eggs. They easily discover the nest by the crawl signs of turtles on the beaches. One fisherman reported that last year 5-6

carcasses of turtles were seen on the beach, but these are quite common, he added.

Shiria Beach

Shiria beach lies just south of Uppala Beach. Shiria River is flowing almost parallel to the beach hence the beach is very narrow. The river joins the sea at Kumbla, way south of this beach. About 1 km stretch of this beach has sea wall, but the beach is still present. There is no fish landing in this beach. The fishermen occasionally see turtles here because the place is less inhabited. But if the fishermen happen to see the nest they collect the eggs for their own consumption.

Muttam-Bengara Beach

This beach is located south of Shiria beach. This Beach is devoid of sea wall and any type of major fish landing. There is a thodu (stream) known as Muttam thodu flowing almost parallel to the beach. On monsoon the thodu makes a temporary inlet with the sea. Turtles are seen regularly here by the fishermen. They also take the eggs if they notice the nest of turtles.

Berikka-Parakkatta Beaches

This beach lies south of the Bengara Beach. In Berikka, there is about 1km length of sea wall, but there is no seawall in Parakkatta beach. These two beaches lack any type of fishing activity. Turtles nest here, though in small numbers. Fishermen see the turtles very rarely. Normally fishermen do not collect the eggs, though there are exceptions. They do not capture turtles, and even if it is gets entangled in the nets they release it back to the sea.

Koipady Beach

Koipady beach is situated south of Parakkatta beach. This beach consists a long stretch of area having sea wall and a fish landing centre. Just north of this place, is Arikkadi, where there is no sea wall and turtles frequently come here for nesting. The Shiria river makes an inlet in this beach. The Koipady beach is threatened by erosion. Turtle egg is liked in these parts and is collected for consumption. During the turtle nesting season, people search for nests for collecting the eggs. This starts after November. Here the turtle mortality is mainly due to poaching of eggs by the community people.

They do not capture turtles and even if it is get entangled in nets they release it back in to the sea. The fishermen are traditional and many of them are illiterate.

Kavugoly beach

This beach is on the south of Koipady beach. On the eastern side of the beach, a small stream is flowing. It is about 20 – 25 m away from the beach. The beach is wide, with minimum disturbances. Turtle nesting has been reported from this beach. If the fishermen see the nest, they take the eggs. They also reported seeing hatchlings leaving from their nest towards the sea.

Nellikunnu (Adakathuvayal) – Kasaba Beach

These two beaches are situated close to the Kasaragod town. Both beaches are more or less straight and wide and devoid of sea wall except in a stretch of one kilometer north of Nellikkunnu beach. This beach is crowded with fishing vessels. South of this beach the Chandragiri river makes an inlet with the sea. Here wide beaches are present and they are sparsely inhabited. Turtles nest through out this beach and fishermen collect eggs for consumption. In addition to that, turtle eggs are also sold in the Kasaragod market.

Kizhoor Beach

Kizhoor beach lies just south of Chandragiri Puzha. It is a wide beach with a minor fish landing centre. This beach has a sea wall which extends up to Chembarikka south of Kizhoor beach. The beach is bordered with coconut trees. Beach is almost calm and sparsely populated. Turtles have been sited in the north near the Chandragiri river mouth where wide beaches are present. If people see turtle nest, they collect the eggs for consumption. Eggs are available in the markets also, though the sales are done discreetly.

Chembarikka – Odoth beaches

These two beaches do not have any major fishing activities. In Chembarikka beach, there is a large rock protruding into the sea. Large scale sand mining is a major activity. One can see huge loads of sand being transported. The beach from Chembarikka to Odoth is considerably wide, devoid of sea wall, bordered with coconut trees, casuarinas plants, canophillum enophillum etc.

Nearer to Odoth, the beach is calm and is devoid of any type of disturbances except sand mining by local women in some area. Odoth is the place where turtles arrival has been definitely confirmed because according to one of the women who was interviewed, they collect a large number of turtle eggs during the season in the early mornings when they come to mine the sand. They look for fresh crawls of turtles on beaches, dig up the nests and collect the eggs. One woman recollected that in her younger days her father used to bring turtles from sea, which they would tie to a tree. In those days they used to eat the turtle's meat regularly. Now they have stopped eating turtle meat because all of them know that it is a criminal offence. Now, they don't capture turtles, but only consume the eggs.

Kottikulam-Bekalam Beaches

These two beaches are situated south of Odoth beach. Kottikulam is a well populated beach with fishermen and fishing vessels. It is also a major fish landing centre. Just north of this beach, rocks can be seen protruding to the sea. Sea wall is present in these beaches but wide beaches are present on the south of these beaches. Turtles have been reported in these beaches. They dig out the nest regularly for turtle eggs. Some of them consume the eggs raw. But they do not capture turtles. The fishermen who were interviewed said that they have seen hatchlings crawling towards sea. Bekalam is also a small fish landing centre. Kasaragod-Kannur (NH) road is lying very close to this beach. South of the Bakelam beach, the famous Bakel Fort is situated. This is a major tourist place. Turtles have been reported from this beaches also.Fishermen attitude towards turtle and eggs is same like kottikulam beach.

Pallikkara Beach

This beach is south of the Bakel Fort and has a small fish landing center. Here the fishermen are not native of the place. They are migrants from the South of Kerala, mainly Trivandrum (Vizhinjam, Pulluvila). In Pallikkara area the coast is mainly used for tobacco plant cultivation. The beaches are relatively wide bordering with sea wall and sand dunes. Towards south, the habitation is almost missing. In Pallikkara, there is very much demand for turtle eggs and is sold at a high price. The native fishermen do not allow the migrated fishermen to capture turtles. So the migrants also stopped eating

turtle's meat. As the population of migrant fishermen here is less, they generally do not violate the practices prevalent in this coast. In this beach, sometimes many carcasses of turtles are seen. Fishermen reported that in the last 2 years, this has been a regular phenomenon. The number ranges from 2 – 20 every season. 5 years before turtles nesting was very common beach, but its number has been considerably reduced now.

Chitari-Ajanoor Beach

Aavikkal(Ajanoor) beach has a sea wall about 2 km in length. Both beaches are fish landing centres. The beach is more or less wide and turtles nest here, though their number has come down considerably. Here also collecting eggs for consumption is a regular practice. Turtles usually come here to nest from November. If the turtles get entangled in their nets, the fishermen release it back to the sea. Last year one carcass of a turtle was found there. 5 – 10 years before turtles used to come here in large numbers. The Chitari puzha makes an inlet with sea on this beach.

Bella - Hosdurg Beach

These two beaches lie near Kanjhangad. There is a major fish landing with lots of fish markets. Up to Thaikadappuram, the place where Neleswaram river makes an inlet with sea the beach is almost straight and many areas lacks fishing and other human activities. So turtles comes freely and nest in these beaches. The beach is devoid of sea walls. Turtles nest in these beaches quite frequently after October but its number is decreasing according to the fishermen. Sometimes fishermen collect the eggs of turtles. Nesting of turtles used to be very frequent and large in number 10 years before. Fishermen do not consume the meat of turtles; they release it back if turtles get entangled in the nets.

Thai Kadappuram – Azhithala Beaches

This is the place where Nileswaram River makes an inlet with the sea. The river mouth is very wide here. Azhithala beach is more or less devoid of people and covered with casuarina and other wild plants . The beaches are less inhabited. The fishermen don't collect eggs or meat of turtles. Here the people are more educated and know that the turtles are endangered species. They do not bother about the nesting of turtles. People remember that

years ago lots of turtles used to come here. Here most of the local community catches fishes mainly from the river.

Mavila – Padanna beaches

It is located just south of the Nileswaram river mouth. These two beaches are like an island surrounded by backwaters formed by the Nileswaram and Kawai rivers. The beach has sea wall with frontal wide beaches. The beach is not inhabited and is bordered with coconut plantations. There used to be a minor fish landing place in Padanna beach. But this place has no activity now as the fishing vessels have been sold out. The whole area is sparsely populated. The beach is under the threat of erosion though the effective beach area is very small. Here fishermen mainly catch fishes from the backwaters, so their activity on the beach is little. Here turtle nests have been reported, but not in large numbers. According to them turtles used to come here in large numbers. Turtle eggs are dug out here and consumed by the fishermen.

Thrikkarippur beach (Kawai beach)

Thrikkaripur beach is a continuation of the Padanna beach. The beaches are more or less wide and are noted by the absence of sea walls. Coconut plantations border the beaches. Beaches are slightly sloped. The whole area do not have any fish landing. Most of the canoes were sold due to increase in fuel expenses. Now there are only 2 -3 canoes there. Kawai kayal (backwater) lies parallel to this beach. This coastal barrier strip remains detached from the main land as it is devoid of any coastal roads. Turtle nests regularly on seasons, starting from November near the days of full moon and new moon. The people here neither capture turtles nor do they take the eggs. Normally no fishermen bother about the arrival of turtles. But jackals and feral dogs steal the eggs of turtles. It is the only threat towards turtle eggs.

5.2 KANNUR DISTRICT

Ezhimala

This beach's southern end border, Ettikulam, a small fish landing center and northern end is very wide and is the restricted area of the Naval Academy. The beach is devoid of people and is quite calm. Academic offices

are situated only on the top of a hill. So almost the whole beach area is minimally disturbed. Even though a major area of this beach, which is with the Naval Academy, could not be surveyed, it was learnt that turtles are coming relatively in high numbers. Jackals steal turtle's eggs, which is the main problem here. A Lighthouse is situated at the top of the hill. The long stretch of the beach is north of this which is one of the high potential area for turtle conservation.

Pudiyangadi – Choottad Beach

Pudiyangadi is the major fish-landing center in the Kannur district. Sea walls are constructed all along the coast with frontal beaches. During the fishing, if turtles get entangled in their nets, they will let it off as every one knows that taking the eggs or killing turtles is against the law. Years before fishermen used to consume meat and eggs of turtle. Now it has been stopped. Some fishermen from Tamil Nadu have settled here. They say that if any one capture turtles and bring to the shore, then the local community will beat them up. Here the Muslim fishermen community believe that turtles are incarnations of God, and so there is no capturing of turtles nor eggs.

Choottad beach is also a small fish landing centre. Muttam river joins the sea here. This happens only in monsoon. The river is flows almost parallel to the beach. Fishermen reported that turtles get caught in the fishermen's net once every week but they will release it back to the sea. Turtles come here to nest, but their numbers have gone down over the years.

Matool beach

The beach is just north of the Azheekal ferry. Here the Valapattanam River joins the sea. Both side of the river is completely protected with sea wall. Matool is a small fish landing. It is just north of the river mouth. Sea walls have been constructed all along the coast but wide beaches are present. In some part of this coast sea walls are damaged due to the depleting frontal beaches. Turtles come here for nesting. If the fishermen see the nests of turtles then they dig up the nets and collect the eggs. In recent days they aren't getting turtles eggs, as the number of turtles coming are being reduced.

Vayparambu Beach

Vayparambu beach is located just south of Azheekal harbour. The beach from here to Azheekal is considerably wide and uninhabited. There is no fish landing here and all boats land at Azheekal harbour. Many domestic tourist from nearby places visit this beach. The beach is heavily bordered with Casurina plantations. Turtle have been regularly seen in this beach, but the frequency has fallen recently. The people used to eat turtle's meat 5 years ago, bu t now they no longer eat it. But they consume the eggs of turtles.

Neerkadavu Beach

It is located in the southern part of the Vayparambu beach. It is a wide beach occupied by fishermen including their fishing vessels and houses. The whole beach is protected with sea wall. But turtles nest here, on seasons nearer to full moon and new moon days. Here the fishermen collect the eggs for consumption. They don't use the meat of turtles, and so let the turtle back to the sea if accidentally caught in the nets.

Ayikkara Beach (Moppila Bay)

It is one of the major fishing harbour in Kannur. Now the harbour is not functioning as the mud gets accreted in it and so the boats cannot enter into the harbour. Pulimutt has been placed in the harbour. Sometimes turtles also get entangled in the fishing nets leading to strangulation. Most of the times, they are released back to the sea. Turtles come to the adjacent beaches of this harbour. But now its number has been greatly reduced because there are no beaches as the adjacent beaches are covered by sea walls.

Edakkadu – Muzhipilangadu Beach

North of the Edakkadu beach consists of rocky area. But southern region has a stable beach including Muzhupilangadu beach. The beaches are bordered with sea walls, but wide frontal beaches are present. Many parts of the beaches are planted with Accasia and Casurina plants. Some rocks are seen protruding into the sea. Muzhupilangadu is a tourist destination and a resort has been built near the beach. Here the beach is not sandy. The southern portions of this beach have a river mouth of the Dharmadam river. Turtle nest are reported in these localities. The fishermen have recollected

having seen turtles swimming towards the shore during the days near full moon and new moon. Sometime turtles will get entangled in the net also but they free it. Turtles usually nest on the shore in full moon and new moon nights. The people of this locality do not take the eggs of turtles but jackals are a threat to the turtle eggs. Some fishermen have also seen hatchlings leave for the sea.

Thalai

Thalai is a major fish landing situated in the north of Mahe. It is also a thickly populated area. The whole beach is occupied by fishermen and by their fishing vessels. The beach has sea wall but with frontal beaches. After Muzhupilangadu, this is the place where turtles come to nest. Fishermen of this area collect the eggs of turtles regularly for consumption. Earlier, they used to eat the meat of turtles, but now this practice has stopped. Even, if it is caught in the net, they release it back to the sea. The number of turtles coming here is gradually decreasing now. According to a fisherman, whose friend is working on a trawler boat, turtles get caught in the trawler nets and almost all of them would get strangled and die. Turtle's arrival is mostly noticed on the new moon or full moon days.

Mahe (Union Territory of Pondichery)

Puzhithala is one of the beach in Mahe where enough beach area is present. It is situated just south of the Mahe river mouth. Sea wall starts from this place to Chombal (a harbour in Kozhikode District). The beach is wide and bordered with coconut plantations. Turtles visit these beaches to nest. They dig out the turtle nest if it is seen and collect the eggs. They don't use the meat of turtle. If it gets entangled in their net, they will release it back to the sea. About 8 years back turtles used to come in large numbers, but now its number has dwindled.

5.3 KOZHIKODE DISTRICT

Payyoli – Kolavippalam Beach

These beaches are located south of Murad River mouth. Most of these beaches are devoid of sea wall especially on the southern side of the river mouth. The beaches are considerably wide. **This is one of the rare places**

where fishermen community has come forward to protect the eggs in makeshift hatcheries. Here a group of nine friends , started protecting turtle's eggs about six years back. They developed a hatchery, where they collect and kept all the eggs found from nests on the beach. Once the eggs hatch, they release the hatchlings to the sea. These young people were doing all these activities without any remuneration or profit. But now the Forest Department has employed some of them for maintaining the hatchery. Turtles are regularly coming here. Its arrival starts from September onwards. The group gives their entire energy to protect the turtles, they have organised now as a NGO by name 'Theeram" They also spread the awareness on the importance of protecting their environment in addition to the mangrove afforestation and nursery programme The beaches are bordered with coconut plantations. This effort has triggered a lot of media attention and has highlighted turtle conservation in the State. But intense sand mining in the north of the beach near the inlet of the river has been threatening the turtle conservation efforts and has also led to sporadic incidents and clashes between the conservation groups and the sand mining workers. (See Appendix – Literature Survey : Articles by Roshinikutty Nos 9 and 10 for more details)

Thikkodi – Kodikkal beaches

These beaches are located south of Kolavippalam beach. There is a small fish landing with a small number of canoes. The main feature of this area is the rocky headlands. There is a large rock protruding into the sea off Thikkodi. Beaches are more or less stable and wide with sea walls in many places. Turtle nesting are less in number here. Here also the fishermen are aware about turtle conservation and they don't collect the eggs.

Kappad - Thuvappara Beaches

Kappad is a small fish-landing beach. Rocks protrude into the sea in the Thuvappara region. In Thuvappara beach area, a tourist resort is located on the beach. Here tourism is a major activity. Kappad beach is not very wide, bordered with Casurina plantations. Turtles come here but not in huge numbers. They usually come ashore on days nearing the full moon and new moon. The people don't use the meat of turtles but if they see the nest of

turtles, they excavate it and collect the eggs.. Turtles entangling in nets is a very rare thing. Even if it gets caught, then they let it off to the sea.

Kannan Kadavu Beach (Kattila Peedika)

It is located just south of Kappad beach. The whole area is protected with sea wall. But severe erosion causes damage to seawall is observed in many places, but sea walls do exist in most part of the beach. The beach is more or less wide in many places. Here the sea walls are 9 years old. Before that turtles used to come here for laying eggs. The people took the eggs of turtles at that time. Now this activity has been very much reduced, as the turtle's coming here is less in number. But on season two or three turtles nest here, where sea wall is absent. The fishermen belong to Arayas community. South of this beach, Korapuzha River makes an inlet with the sea.

Puthyappa – Elathur Beaches

Korapuzha makes an inlet with the sea at Elathur. Both side of the river mouth is protected with sea wall with no frontal beaches. South of this area, Puthiyappa fishing harbour is located. They have placed pulimutt in the harbour. Southern part of harbour the beach is considerably wide. Turtles are coming in these beaches but not in huge numbers because the beach is crowded with fishermen's activities. Most of the fishermen do not take the eggs of turtles, but there seems to be exceptions.

Velliyil – Thoppiyil Beaches

Beaches are very wide without sea walls. It is a major fish landing in Kozhikode municipality. Most of the beaches are occupied by fishermen with their fishing vessels, markets etc. Turtles come here for nesting. The fishermen no longer take the eggs of turtles because they know that it is prohibited under law. As it is prohibited under law they are not so interested in searching for the eggs of turtle. Southern part of this beach is a tourist place, where domestic tourists come. It is very close to the Kozhikode town. The whole beach is bordered with Casurina plants. South of this place, some places are protected with sea wall. A youth club here has evinced keenness in conservation and turtle protection.

Kappakkal Beach

This is south of Kozhikode beach. It is a small fishing village coming under Kozhikode municipality. The beach is considerably wide bordered with coconut plantations and houses of fishermen. It is moderately populated. In near future, sea wall is to be laid here. The sanction for this has already been given. Turtles come here for egg laying. Collecting turtle eggs is a common practice among fishermen here. Long time back, there were fishermen who used to wait for the turtles arrival to take its eggs. Now such activities are not happening. Last year also fishermen got eggs. There was a newspaper report in 1972 saying that the largest turtle – the Leatherback had come to this place. At that time the people near by caught it and tied it with a rope. They released it back the next day itself. It didn't lay any eggs. The main community here is Muslims.

Marad Beach

This beach is located just south of Kappakkal beach. Beach is wide bordered with coconut plantations. Sea wall is absent in Marad beach. It is also a small fish-landing beach. Turtles nest here in season. It starts from November onwards. If the people see the nests, they collect eggs for consumption.

Chaliyam Beach

This beach has the Beypore river joins the sea in its north and the Kadalundy river in the south. The entire beach is protected by sea wall giving frontal beaches. North of this beach have a petrochemical industry (PEEVES). They have created their own compound walls that displaced some of the fishermen's land of this area. The beaches are bordered with coconut plantations. The whole area is moderately populated. Some parts of the beach to the south of the PEEVES industry are rocky. Turtles nests on the beach near the rocks, starting from October onwards. Fishermen dig out the eggs, whenever they come across a nest.

5.4 MALAPPURAM DISTRICT

Muthiyam Beach

This beach had a Turtle Conservation Project of Forest Department of Kerala. Two years ago this beach was used for turtle hatchery. Now the hatchery has been shifted to Alungal Beach. Turtles used to come here in large numbers 5-6 years back. Now it has gone down drastically. Fishermen here also reported that turtles get caught in the drift nets. When the turtle gets caught in the nets, the fisher folk immediately let it off, as they fear of being cursed. The beaches from here to Alungal are bordered with coconut plantations and fishermen's houses. Just south of this beach, is a tourist resort and a park close to the beach.

Alungal Beach

It is a one of the fish landing centres in Malappuram district. The turtle hatchery maintained by the Forest Department of Kerala is situated here. Two people of the fishermen community have been employed by the department to guard the beach from Muthiyam to Purapuzha. They walk the whole beach during the night looking out for turtle nestings, collect the eggs and bring it the hatchery, where the eggs are incubated under control, by protecting the hatchery with bamboo mesh. This venture is about 3 years old. In the year 2000, they had collected about 2500 eggs of which 2300 hatched. In 2001, they had collected 600 eggs in the first 3 months of the season, of which 250 had hatched. The guards confirmed that there are two species of turtles, namely Hawksbill and Olive Ridley, nesting in this beach. The beach is crowded with fishing vessels and people up to Chettipady. The beach is very wide (about 50m) bordering with coconut plantations. Now in these beaches, fishermen do not consume the eggs because the Forest Authorities are taking awareness classes about turtle conservation once in every year, and they have published several notices indicating that taking away the eggs is a criminal offence. Even though all these exist, some are taking the eggs by violating the rules. Some fishermen inform the authorities whenever they come across turtles.

Thevar Beach (**Unniyal**)

This beach is located south of Tirur. Turtles are coming for nesting, but the fishermen say that there is no more than two at a time nowadays. September, October is the months in which they are usually seen. If the turtles get entangled in their nets, they will let it off. Here the beach is more or less wide fenced with coconut trees. Northern and southern region of this beach has sea walls.

Kuttai Beach

It is a wide beach bordering with coconut trees. Turtles do not come here as it used to do years back. Fishermen know about the turtle hatchery in Kadalundy (Alungal). One of the fishermen opined that a rule has to be passed here also, prohibiting the taking of eggs. Turtles are coming here in lesser numbers and arrival starts from October . Some fishermen collect eggs if they notice the nest. The fishermen said that the population of turtles is decreasing because most of the turtles get entangled in the nets of boat and gets killed.

Pandai Beach

It is a beach on the south of Kuttai beach. The beach is wide here, devoid of sea wall. September is the starting month for the turtle season to begin. If they see the nest they collect the eggs for consumption. According to a fisherman, the turtles get entangled in the disc nets used by boats, sometimes they kill these turtle or sometimes they release it. The fishermen reported that carcasses of turtle are seen in these beaches.

Nayarthodu

It is also a very wide beach just south of Pandai. It is a main fish-landing place. The beaches are bordered with coconut trees and the huts of fishermen. Here also turtles nest and the fishermen take the eggs, if they see the nest of turtle. From here to Kuttai azhimugam the place where Bharathapuzha river makes an inlet with sea, the beach is covered entirely by sea wall.

Kuttai Azhimugam

This is the place where Bharathapuzha joins the Arabian Sea. To the south of this is the major fishing harbour of Ponnani. The river mouth is very wide. In Kuttai there is no beach. Sea has reached up to the sea wall. But this will get down in the summer season. Turtles have been seen north of this beach. Some people take the eggs if they see the nest. There are also people who watch out for the nests tocollect the eggs.

Veliyamcode

This beach is situated south of the inlets of one of the tributaries of Barathapuzha River. The whole beach is protected by sea wall, with some frontal beach left. There is an aquaculture farm near the beach run by the Matsyafed (A government agency). October to December is the season, when the turtles come to lay eggs. People usually take the eggs if they see the nests.

Perumbadappu Beach

It is a beach which lies just south of Veliyamcode. Here the coast is considerably wide than Veliyamcode. The sea wall is 20 – 25 m away from the beach. 10-15 years before, people used to capture turtles for cosnumption. Now this activity has fully stopped. The fishermen said that turtles are regularly coming here, in relatively good numbers. Most of the eggs are being taken by the community.

5.5 THRISSUR DISTRICT

Periyambalam Beach- Andanthodu beach

These two beaches lies south of Perumbadapu beach. The beaches are wide and do not have any type of disturbances. There is no sea wall and fishermen houses are away from the beach. Turtles nest in both these beaches. If people find any nest they dig it and collect the eggs. They do not catch turtles, and even if it is gets entangled in nets, they release it back to the sea.

Pappally Beach

This lies south of Andanthodu. It is also a wide beach. A few houses of fishermen were seen on the beach. Turtles nests are also reported here. Collection of eggs for consumption happens here also.

Maanalamkunnu Beach

This beach is similar to the Pappally beach, wide and calm . Coconut trees are also seen along the border of the beach. A fisherman quoted that, "here the turtles are coming regularly. We usually take eggs. If it gets entangled in the nets, we let it off. The season starts from November onwards. One egg will cost about Rs 4-5/- here. We sell these eggs to tea shops." According to the fisherman, large kolama (Leatherback) and small turtles are nesting in this beaches. The nesting of leatherback could not be confirmed. The sea shore is devoid of any type of constructions.

Edakkayur Beach

This is a small fishing area with a few houses on the beach. Turtles come during the season in relatively good numbers. Anyone, who first sees the nest, takes the eggs. This is a common and regular activity here. They sell the eggs at Rs 3/- each to the teashops. Fishermen do not consume the meat of turtles. The beach is broad and almost calm. Kottapuram and Thiruvatra are adjacent beaches, where the features are very similar. The beaches are bordered with Casurina plants. These beaches do not have any seawalls.

Vadanapally Beach

This is a small fishing area coming under Vadanapally Panchayat. There is a market near the beach. North of this beach is completely covered with sea wall. Southern parts have moderately wide beaches. Turtles have been regularly seen on this beach especially after October. If the fishermen see the nests they dig out the eggs. Eggs go to the markets, but the sale is done discreetly. Eggs are sold only to fishermen of that place. Eight years before, a lot of turtles used to come here, according to a fisherman.

Thalikulam Beach

Thalikulam is a small fishing area with a market adjacent to the beach. The whole beach is devoid of sea wall. The beach is more or less wide and is sparsely populated. The beaches are bordered with coconut plantations. Turtles nest here in good numbers. Collection of eggs is common and sometimes carcasses of turtles are seen here. The youth go in search of eggs at night with the help of petromax lamps.

Nattika Beach

This beach lies to the south of Thalikulam and is broad and calm. Just north of this place is a tourist resort on the beach. Another resort is also being built on this beach, violating the CRZ norms. These beaches, including Thalikulam beach, is poised to become a major tourist destination. Turtles come here in good numbers. The local people dig out the eggs if they see the nest. During the survey, here the researcher found a carcass of hawksbill turtle. The fishermen said that carcasses of turtle and dolphins are usual sight here . Two carcasses of dolphins was also seen nearer to the beach.

Kothalam Beach- Kazhimbram Beach

Kothalam beach is quite wide and devoid of sea wall. The whole area does not have the disturbances of any human activity. Kazhimbram beach is just south of this beach, which is also devoid of sea wall. Coconut plantations are also seen very near to the beaches. Turtle nest here from September onwards. Whenever people see the nest, they dig it out and collect the eggs.

Kaipamangalam Beach

It is more or less a wide beach with sea walls. In Kaipamangalam beach, an aquaculture farm is situated, which is run by the Matsyafed. Here turtles have been sighted, in good numbers. People take the eggs if they see the nest. They don't eat the meat of marine turtles, but they eat the meat of tortoise and fresh water turtles. South of this beach is fish landing, Munupeedika. From there to southward there is no beach up to Azheekode and is fully covered with sea wall.

Azhikode Beach

Here Munambam Kayal (backwater) makes an inlet with the sea. Azhikode harbour is situated north of the beach on the banks of river. Northern part of the river mouth is very wide. Sea wall is about 300m away from the sea. Beach is more or less calm and quiet. In this beach there is no major fishing activities. The boats are working at the harbour. Casurina and coconut trees border this beach. September onwards turtles come ashore to nest. The number of turtles that nest has reduced along the years. Turtle's eggs are sold in the markets. It costs about Rs 2 – 2.50. Everybody is aware of the law, which bans the taking of eggs. Even then they collect the eggs. Sometimes fishermen have seen carcasses of turtles. They have also seen turtles offshore. Sometimes the turtles get entangled in the nets. Normally the fishermen release it back to the sea, but sometimes it gets strangled to death. A youth club near the beach showed interest in turtle conservation and. They knew its importance from a newspaper clipping, which referred the activities of turtle conservation in Kolavippalam. The members of this club have been talking to the fishermen about the need for turtle conservation, and dissuading them from collecting eggs.

5.6 ERANAKULAM DISTRICT

Munambam Beach

Azheekal harbour, a major fishing harbour is located on this beach. The whole area has sea walls with little frontal beaches. The beach is narrow, bordering with fishermen's houses. 10 – 15 years ago, a lot of turtles used to come here. At that time this area was less populated. They used to steal the eggs from the turtle even as it was laying them. They usually find the nest by tracing the crawl marks of turtles. They also reported having seen Kolama (Leatherback). Earlier they used to eat the meat of turtles. Just south of this beach, a fishermen who was interviewed said "now the turtles are very rare. Anyway if they come to lay egg, we will catch the turtle and kill it for eating. Many people here are using the meat of turtles.

Cherai Beach

It is a moderately wide beach with sea wall. Now it has been developed into a tourist spot, with tourist resorts. Now this area has a floating resort on the

backwaters, which is just 150 m away from the beach. Foreign tourists visit this place. Kuzhipally beach is on the south of this area. The beach is moderately wide, without any fish landings. Sea wall is present, bordering with coconut trees and Casurina plants.

There is a reading room near by the beach. Some youngsters of this reading room were very enthusiastic to discuss on turtles. They protect the nests by erasing the crawl signs, which makes it difficult for people to find the nests. This group is very much interested in turtle conservation. Turtles usually come to lay eggs, but according to them the number has decreased. Some people could exactly predict the arrival of turtles and if they see someone taking the eggs, they ask them to leave it back. They have seen the hatchling of turtles going towards the sea. According to them, 25 years ago, Kolama (Leatherback) had come here for laying egg. Fishermen who come to fish here from Kolachal (Tamilnadu) kill the turtles if it gets entangled in the nets. They do this because they think that it will reenter if is let off.

Malippuram Beach

From here to Vypin, the beach is very wide. Beach is bordered with Casurina plantations. Lots of ipomea species has been planted in the whole shore. Turtles nest on this beach mainly after October. But the fishermen usually do not notice turtle activity. They do not catch the turtles, because they believe it is an incarnation of Lord Vishnu (Kurma avathar). But they collect and eat the eggs if they see the nest of it. There is a lighthouse at Puthuvipe. Fishermen have seen the hatchlings regularly in the beach. After this place, up to Vypin there are no fish landings. The beaches are uninhabited. Accretion happens regularly. Here the people face a major drinking water crisis.

5.7 ALAPPUZHA DISTRICT

Thaikkal Beach

This is a major fish-landing centre in Alappuzha district. The beach is very wide, without sea wall up to Ottamassery . Northern part of this beach has a sea wall. The beaches are crowded with fishing vessels, markets etc. A fisherman who was interviewed remarked that turtles are going to be an endangered species. He said that they have not been seeing the turtles for

more than 3 years now. Before that turtles used to come to this beach for laying eggs. Here the people dig out eggs if they see the nest. Earlier, they used to eat the turtle's meat. The fisherman quipped that this was why the number of turtles decreased. Here Christians are the main community. Now the people are afraid of collecting the eggs of turtles because last year in Alappuzha district the police caught two persons who were caught killing a turtle, which had come to nest.

Alleppey Beach

This is a beach with a lot of human activity in terms of tourist visits. The southern part of the beach has sea wall. A dilapidated sea bridge (kadal paalam) can be seen protruding into the sea. Turtles nesting have been reported here. Two years ago a carcass of a leatherback turtle was seen under the pillar of the sea bridge. The women, who come to buy the fish from beach, collect the eggs of turtles if they see it, and sell it in the market, but all this is done discreetly. The people don't allow the meat of turtle to be sold in the market. So if the turtles get entangled in the nest, they release it back to the sea. Last year, a turtle had been brought to the market for selling, but the commission agent refused to sell it and therefore they released it back to the sea. Carcasses of the turtles are a regular sight in this beach. A fisherman remembered that recently , one day very early in the morning (about 5:00am) he saw a large turtle (it may be a leather back, from his description of it), but on seeing him, the turtle returned to the sea.

Punnapra Beach

This is a wide beach with sea wall. The beach is sandy with traditional fish landing centre all along the coast, like Vadakkal, Punnapra South and North. Turtles are sited here from December onwards. The fishermen believe that arrival of turtles will bring them fish. In fibre boat, which uses drift nets, the turtles sometimes get entangled. They then cut the flippers of the turtle and throw it back to the sea. But earlier, people used to eat the meat. Here, now they are afraid of law as the police caught two people who killed a turtle. But poaching of eggs is being carried out discreetly. Fishermen remember about 25 years ago, they got a leather back turtle in the net. And 45 years ago, a leather back turtle had come here for laying the eggs. At that time the fishermen caught it and sold its meat at Rs 1.50 for a piece to about

hundred people. Now mostly Oliver Ridley's nest here. The fishermen believe that the turtles are useful in eating the poisonous plants in the sea. While they are going for fishing, even if they see the turtle they won't show it to others because they believe that seeing turtles is a bad omen. The meat of turtle has a pungent smell and so the women do not even touch it.

Thottapally Beach

South of this beach, Pallana River makes an inlet with the sea. This beach has small fish landing. Beach is considerably wide and there are sea walls. Turtles nest here, but not in large numbers. Fishermen remember seeing turtles laying their eggs, but of late they do not see much of turtles. No one take the eggs of turtles because they believe turtles are the incarnation of Lord Vishnu. If it gets entangled in their nets, the fishermen pray before it and then release it back to the sea.

Pallana Beach

This beach is now a major fish-landing center, due to its very good seasonal catch (Chakara). So since the last 4 years, canoes from the south and north of this beach come here for fishing. Beach is fully crowded with fishermen, markets, fishing vessels, shops etc. The beaches are bordered with sea wall. Normally the turtles do not come for egg laying, but years before, turtles used to come here. The fishermen used to dig out the eggs. Sometimes carcasses are also seen in the beach shore. Sometimes turtles get tangled in the nets. If so then they will release it back. Turtles have been sited in the Pallana river mouth.

Valiyazhikkal

This is a wide beach situated just north of the inlet where the Kayamkulam kayal backwater (TS Canal) meets the sea. Here the beach is wide, but its northern part is narrow with sea walls. Turtles come for laying eggs on the beach nearer to the river mouth. Fishermen usually dig out the eggs of turtles, but the number of turtles nesting nowadays is decreasing. Sometimes turtles get entangled in their nets (thirandi vala). Normally they would release it back to the sea. Sometimes the turtles will die in the net.

Turtles nest after November, normally on the nights nearer to full moon and new moon.

Vellanathuruthu

This place is comes under Alappad Panchayat. The whole beach is covered with sea wall. The beach is thickly populated. Most of the fishermen from here work at the Neendakara harbour. This place lacks quality drinking water. Here there is very little beach area between the sea and the seawall. But after the monsoon, sea will recede and the beach becomes visible. Turtles come here after September nearer to the nights of full moon and new moon. Eggs are collected by the people, if they see the nests. The sea wall came into existence 20 years ago. Before that, turtles used to come here in good numbers. 3 - 4 years ago, the carcass of a turtle was found in the beach. A local youth club is ready to do awareness programme in their place, for turtle protection. According to fishermen, turtles are seen off shore and they sometimes get entangled in the nets. Normally they release it back into the sea. One of the fishermen has seen the turtles moving towards the shore during the days nearer to full moon and new moon. Ponmana beach is located south of this beach and it comes under the Chavara panchayat. These coastal strips have extensive black sand deposits and hence are mining sites of Indian Rare Earths (IRE) and Kerala Metals and Minerals Limited (KMML). This has led to severe sand erosion. The TS canal (Kayamkulam kayal) runs almost parallel to the coast.

Kovilthottam is just south of the Ponmana beach. Here 3 persons died 3 years ago after consuming turtle meat. Here people capture turtle for their meat.

5.8 KOLLAM DISTRICT

Kollam-Thangassery fishing harbour

South of the Thangassery fishing harbour is the Thoppupally beach also called Kollam Beach. Moothakkara, Vadi, Jonaka kadappuram are adjacent beaches in between Kollam and Thangassery beach. The whole beach is crowded with fishing vessels, markets, fishing villages etc. Fishermen colonies are also seen along the shore. Turtles do not nest here in peace, as they are poached for its meat, if noticed. Some times they get entangled in

the nets of fishermen, which is then brought ashore and ends up in the market. The fishermen know that they should not catch turtles. The number of turtles coming has greatly come down after the construction of pulimutt. Here people do not eat a species of turtle called Oduvetti (hawksbill) because it's meat has poison. The agents who buy the dolphins and turtles cut it into pieces and they are then sold with fishes. The fishermen will get 100 to 150/- for each turtle. In the market it's price goes to Rs. 300 or 400/-. Turtles come to this beach up to March. Their numbers have gone down over the years. Last year, the fishermen caught 3 turtles from these areas.

Eravipuram Beach

This is in the southern part of the Kollam beach. The beach is more or less wide. Thanni, Kakkathoppu beaches are near by beaches. All the beaches are wide with most of them having seawalls. Turtles have been sited here as well. The fishermen take its eggs, if they see the nest. Some people catch turtles. In these beaches both Olive Ridley and Hawksbill have been sited. But the number is less now as compared with the early period. Sometimes the turtles get entangled in shore seine.

Mukkam Bay

This beach lies just south of Eravipuram beach. Sea erosion is a major problem here. This beach is a much less populated. Turtles regularly come here during the season. According to a fishermen some of the fishermen eat the turtle eggs, but many do not.

Pozhikkara

Paravoor Kayal (backwater) make inlet with the sea here. The whole shore is covered with sea wall. Just south of this area, is Chilakkal, a place that comes under Kottapuram Panchayat. This is a small fishing village. Turtles used to come here in large numbers, during the past, but now it has been greatly reduced. During fishing, sometimes turtles get entangled in the nets. The fishermen bring it to the shore and sell it to the agents along with the fishes. They get up to Rs. 50 – 100/- per turtles.. The fishermen of that place do not eat the eggs of turtles. So the agents take the turtle's egg. The fishermen show them the place where turtle laid their eggs. In the last season also, they have got about 50 turtles in the nets.

Kappil Beach

The northern part of the beach is covered with sea wall. Here the Kappil kayal (backwater) makes an inlet with sea. There is a tourist resort on the banks of this lake. The beaches on the south towards Edava do not have any sea wall. Turtles usually come here to lay eggs. Here the people don't use the meat of turtles. But sometime the turtles get entangled in the net while fishing. Here some of the fishermen have mobile phones. If turtles get entangled in the nets, they call the fishermen of Maryanad, who come and take away, the turtles. Its price ranges from 300 – 1000/- depending on the size of the turtle. Normally fishermen of this locality do not use the meat of turtle. But they consume the eggs if they get.

5.9 TRIVANDRUM DISTRICT

Anjengo

This is major fish landing coming under Anjengo Panchayat. The whole beach is well populated with fishermen dwellings and activity. Towards north there is another fish landing point known as Mampalli, which is also a crowded beach. The whole area is devoid of sea wall. Fishing vessels occupy a major portion of the beach. Turtles have been reported at sea by the fishermen. If it gets entangled in the nets, some of them bring it to the shore and sell it in the market. They sell it for at least Rs 100/- per turtle. Some fishermen also collect turtles eggs from the beach. Many fishermen buy turtles eggs for eating, especially if their catch is poor. Some fishermen also believe that turtle's eggs are good for curing piles and its blood is good for Asthma patients. Turtles have been seen to come here for nesting mainly from January. Christians are the main community here. The local community has been demanding that the fishing harbour planned at Muthalapozhi be extended to their beach as well.

Thazhampally

Thazhampally beach lies just north of Muthalapozhi, where Kadinamkulam kayal (backwater) joins with sea. The beach is wide here, bordered with coconut trees and also less crowded. Turtles nest in this beach also, but here also they are facing severe threats because eggs and meat are

consumed by the local community. Turtles are also sold in the market, if it gets caught in the nets. Their market place is mainly Chirayinkil market. The numbers of turtles have dwindled over the years. Fishermen are mainly of the Christian community.

Perumathura – Mariayanad

These beaches are situated just south of Muthalapozhi. The beaches are bordered with sea wall and fishermen houses. It is a thickly populated area. Mariyanad is a major fish landing point. Here lots of fibre boats are operating. Turtles come to nest here in good number. But the mortality of the turtles is very high. Fishermen kill the turtles without any reason. For example, interview with fishermen revealed that last year they killed 3 turtles by throwing stones! Consumption of eggs is also a severe threat compared to other areas. Our researchers found that eggs were being supplied even to a Convent nearby. Some times carcasses of turtles are also seen here. In Perumathura, fishermen are mostly Muslims, and they don't eat the meat of turtles, but in Mariyanad fishermen are mainly Christians. Here turtles are caught even in catamarans.

Thumba – Puthenthura

This is a straight coast line with wide beaches without any main fish landings. Fishermen have catamarans and dugout canoes. Some parts of this beach are protected area under the Department of Space (VSSC). At the southern most end the Akkulam – Veli lake is situated. Veli coast is an area where tourism activity is intense. Akkulam kayal (backwater) is making an inlet to the sea from here. Beaches here are quite crowed with fishing population. Turtles come here for nesting. Fishermen collect eggs if they see the nest. Here also the Christians are the main community.

Valiyathura – Veli

The Puthenthura beach leads to these beaches in a straight coast line. The whole area except Shangumugam, the beach is crowded with fishermen vessels and their dwellings. The beach here is not very wide. Turtles come here very rarely, say one or two, but fishermen catch turtles at the rate of at least one in a month from the sea. The fishermen community is using the meat and eggs of turtles. Turtles usually get entangled in the shore seine

and they are eat them or sell their meat. The fishermen said that when the turtles come to the shore, they catch them and so the turtles rush back to the sea when they see human activity.

Bimapalli –Poonthura

The whole area is thickly populated, beaches are crowded with fishing vessels, bordering with fishermen's huts. Both the area is covered with sea wall with frontal beaches. Turtles do not come here in sizeable numbers. The turtles, even in small counts come from January onwards up to April. But a large number of turtles are caught from their shore seine or during fishing. Near the inlet of the Thiruvallam kayal (backwater) turtles have been seen during the season. Fishermen regularly take the eggs if they see the nest. A fisherman remembers , about 30 – 35 years ago while they were lying in the beaches they saw a number of turtles coming into nest.

Kovalam – Vizhinjam

This is the area of a major international tourist destination with a chain of pocket beaches. The area is very much crowded with shops, tourists, and also to some extend by fishing vessels. Fishermen used to get turtles from the shore seine. They used to sell in the market. Tourism has made this beach a wasteland with lots of waste dumped here and there, especially on the fissures of rocks etc. Kovalam-Panathura is a barrier beach. Panathura is located north of Kovalam. Here the beach is almost absent. The main job of the people of Panathura are fishing and making rope from coconut husk. In Panathura, 20 years before, the sea wall was absent. At that time turtles used to come in large numbers, but now it is totally absent. The coast from Kovalam to Vizhinjam mainly consists of rocky areas. Vizhinjam is a fishing harbour. Lots of turtles are being caught and are sold in the markets of Kattakkada, 25 km from Vizhinjam. In between Vizhinjam – Muloor area, laterite cliffs are present. Mulloor has a small pocket beach, there turtles still come for egg laying. A study conducted by CMFRI has confirmed the arrival of Olive Ridley turtles in this area. (Krishna Pillai S, 1997)

Poovar – Pulinkudy

Here also the coast is more or less straight and wide, except for some rocky areas in Pulikundy. Numerous small fish landings are there between Poovar

and Pulinkudy. Turtle nests were reported by fishermen here . The fishermen catch the turtles if they see them irrespective of whether turtles are at land or sea. Sometimes they collect the eggs also. The turtles are sold near the market. Sometimes they get Rs 500/- per turtle. A fisherman who was interviewed said that last year, they got a big turtle and they sold it for Rs 1000/-. Fishermen have observed that turtles mainly come to nest in places where there are no catamarans in the beach. Fishermen doing fishing using hook and line, use that for catching turtles also. As a whole, even though turtle nesting is very little, they are facing severe threat to their life and eggs.

Pozhiyoor

This beach is located south of Poovar . Its southern most section borders with Tamil Nadu. This is also a fishing area. The beach is crowded with fishing vessels. The area is thickly populated. The whole beach is bordered with fishermen's colonies. Christians are the main community. During the fishing turtles gets entangled in their nets. If the turtle is small, they bring it to the shore to sell it but if it is a larger one, they will release it back to the sea. South of Kollengode (in Tamilnadu) a place named Neerodi is a market. There, every week, 2 or 3 turtles are being sold. Fishermen use turtle's eggs and also meat. Even though turtle nesting has been reported here, the numbers are low.

6. Local self governments, peoples planning and turtles

The details from 93 Local Self Government (LSG) plan documents were reviewed to understand the situation as perceived by them and the thinking of the gramasabha and the grassroots level political understanding of the issue of conservation of nature and sustainable development. The country is committed to biodiversity conservation and there is national Wildlife Act endorsed by the state. The awareness of these policy and legal instruments at the village level could also be understood by looking at the documents. These documents also talks about livelihoods and dependence of the people. Most of them have reports from Gramasabha so that it represents the grassroots position and understanding.

The plan documents of the following local self governments were reviewed and read in the context of the project.

Thiruvananthapuram District

Kulathoor panchayat , Poovar panchayat ,Karumkulam panchayat , Kaarode panchayat , Kottukal panchayat,Thiruvallam panchayat,Thiruvananthapuram corporation, Aattipra panchayat, Kadinamkulam panchayat , Chirayinkil panchayat, Anjengo panchayat, Varkala corporation

Kollam District

Paravoor corporation, Mayyanad panchayat,Eravipuram panchayat, Kollam corporation, Neendakara panchayat, Chavara panchayat, Panmana panchayat , Alappad panchayat

Alappuzha District

Thuravoor panchayat,Arattupuzha panchayat,Thrikkunnapuzha panchayat, Purakkad panchayat,Ambalapuzha panhayat, Punnapra panchayat,Alapuzha corporation, Aryad panchayat,Mararikkulam south panchayat, Cherthala south panchayat, Pattanakkad panchayat

Ernakulam District

Chellanam panchayat,njarakkal panchayat,nayarambalam panchayat, elankunnapuzha panchayat,edavanakkad panchayat,vadakkekara panchayat

Thrissur District

Edathuruthi panchayat,Eriyad panchayat,Edavilangad panchayat,Mathilakam panchayat,Perinjanam panchayt,Kaypamangalam panchayat,Valappad

panchayat,Nattika panchayat,Thalikkulam panchayat,Vadanappally panchayat, Engandiyur panchayat, Kadappuaram panchayat, Punnayur panchayat , Punnayurkulam panchayat, Chavakkad corporation

Malappuram District

Perumbadappu panchayat, Veliyankode panchayat,Ponnani corporation,Purathur panchayat, Vettom panchayat,Thanallor panchayat,Thanoor panchayat, Parappangadi panchayat,Vallikkunnu panchayat

Kozhikkode District

Kadalundi panchayat,Beypore panchayat,Calicut corporation,Chengottukavu panchayat,Koyilandi panchayat,Chemancheri panchayat,Moodadi panchayat, Thikkody panchayat,Payyoli panchayat,Vadakara corporation,Chorode panchayat,Azhiyoor panchayat

Kannur District

Dharmadam panchayat,New Mahe panchayat,Thalassery corporation, Muzhippilanga panchayat, Edakkad panchayat, Kannur Muncipality,Azheekode panchayat,Madayi panchayat,Ramanthally panchayat

Kasaragod District

cheruvathur panchayat,Chemmanad panchayat,Padanna panchayat,Kasaragod muncipality, Neeleswaram panchayat,Kanjhagad panchayat,Ajanoor panchayat, Pallikere panchayat,Uduma panchayat,Mogral puthoor panchayat, Kumbala panchayat.

It was Interesting to note that all that the Local self-governments could identify as the needs for the fisheries sector were extension from the post Indo - Norwegian intervention in the early 1960s. So the demands are for boat repair facilities in every Panchayath and Out Board Motor (OBM) repair facilities in each wards , demands for lamp posts to guide fishermen in the night, harbour and fish landings, ice plant, and seawall . The demand for the Kerosene for OBMs if taken seriously will lead to several fold increase and its implications will be worth looking at. 11 panchayaths record that the pollution from the OBMs and the oil are causing problems for marine life. These panchayaths further record the land sources of pollution and put caution for stopping them in order to increase the marine production. 23 panchayaths have clearly recorded the drop in the fish catch and productivity of the seas. The gramasabha also voice this concern. One panchayath asks for regulation and licensing of boats and OBMs. Out of the 93 only 6 panchayaths could come up with a

detailed list of fisheries resources and names of the species. One could come up with the state level production figures and it is quite worrisome to note that in 1969, 90.4% of the catch came from traditional sector where as in 1989 the contribution from the traditional sector came down to a mere 5.2%. (10. anexure 1) the impact of these changes is not fully understood in the context of resource management. If we analyse the statements and demands for more technology and Kerosene permits and subsidies one can clearly understand that the fisheries exploitation by the fishermen has crossed the threshold and is on the way to a major collapse and has become unsustainable in economic and ecological costs.

The employment opportunities in the coast prior to Indo-Norwegian intervention has been totally different. The use of nylon nets started as post intervention and prior to that jute and cotton were used to make the nets and it was done by the women and the old people providing local employment. 3 panchayaths have identified this problem and asks for providing local employment in these sector but misses to look at the material as the nylon is external to the village.

Three panchayaths also identifies the need for value addition and fish processing and goes beyond ice plant - fish landing trap. This is an area, which is totally overlooked in the fisheries development and local employment. Three panchayaths also observe the need for artificial reefs and interventions for augmenting the production by assisting nature. Two panchayaths also ask for diversification to mussels farming etc.

All the panchayaths failed to address the issues related to conflicts and the coast is becoming more and more prone to the conflicts from various socio political interfaces. " Kadal kodathy" is the traditional system of conflict resolution and has been playing a very significant role in managing the resources . The need for panchayath to be an institution of social engineering and streamlining the development of the area and ensuring the sustainability of resources is too far in the horizon.

None of the documents had the turtle and environment conservation need in a significant way. The national and state concerns are totally overlooked. The local self-governments are not aware about why the coastal regulation zone (CRZ) is marked and the logic behind it. So all the plan documents asks government to exempt their areas from CRZ. Interestingly the sea is seen as a source of unlimited

resources and while noticing the fall in production the solution has been to harvest from larger area so that the yield will not fall.

One can overtly make an observation that these plan efforts are not the real grassroots Plan needed for long term sustainability but apportioning of resources based on the limited knowledge. The international implications of management of the local resources are not figuring out in any of the thinking.

Based on these documents one can also conclude that the fishermen are not at all dependent on the turtle and non fish resources and they do not see any relation to their protection to help them in managing the natural resources.

7. The Coast, People, Environment and Conservation

The interface between Sea scape, landscape , humanscape in the coast will decide the future of our beaches. The pressures perceived in exploitation from the plan documents, interviews and observations all lead to a disturbing scenario for the coast. What could be done and what is being done are major concern during our field work. We happened to see lots of plastic disposable bags dumped in the beach in Kollam. During conversations we found that the same is dumped out as those are the morning toilet packets, as they do not have common or individual toilets in their villages. So the concern for protection of turtle needs to address issues from toilets to the development paradigm of the region. This is all the more difficult as there is total disconnect evident in everything being done, so the effort to connect the development to the species and ecosystem and the very survival of the human species and our resources.

The unique and hopeful effort by the youth of Kolavippalam beach near Payyoli in Kozhikode district is the only ray of hope for the turtles in the West Coast. The same could be scaled up as a model programme for the turtle conservation in Kerala coast. The programme is cost effective and community based, which ensure sustainability of the programme. At the same time challenges and threats from organised sector like sand mining could cause major damages to the local community and turtle.

There are more questions that emerge from the coast than the answers when one gets in to the issue of community building. The changes in the mindsets and the need for mainstreaming the community demands are challenges. In early 1980s the problems for fisheries were highlighted by the fishermen groups. In 1987 independent fish workers unions arrived at conclusions on the threats to the fisheries resources from tourism, pollution, infrastructure projects and defense projects along the coast. There was protest march organized in the full length of the Kerala coast armed with the slogan 'protect water protect life' but none of the plan documents reflect or raise the issue. Is environment and conservation a peripheral issue and development the only central theme and if so how one can ensure the development of the fragile coastal ecosystems with out taking the interconnected dynamism is never answered.

"According to the Dr. Balakrishnan Nair Committee report , the resources available for culture fishery are given to certain fluctuations that are independent of the fishery itself. These are temperature , rainfall ,salinity and currents. The ones dependent on the fisheries are nature , size and type of gear, mesh size, and the number of implements employed for harvesting. The second set of factors can be controlled by human intervention. 'However the first group is almost beyond control… The magnitude in the development of the changes taking place in the craft and gear used in Kerala waters and that too with in a very short period , naturally resulting in considerable stress and strain on the other resources exploited and also between the various sectors involved fishing in Kerala is significantly large to warrant immediate steps to be taken to the rational exploitation and judicious management of the resources'" (page 154 - Transition or Transformation)

The warning signals to the coastal management has been kept aside and we have continued the journey as it was before. The first experiment on community organisation could expose a variety of issues related to the community organisation in the coast and the role of church and religion in the same. The development model which got highlighted was that of the OBMs and the entire coast has OBMs and efforts to sustain the same.

The interviews with traditional fishermen and the travels in the coast reveals that the turtle meat eating and poaching of eggs are very recent occurrences and traditional Hindu and Muslim communities have been protecting the turtles in the beach and offshore. The meat eating could be traced to the presence of the Christian fishermen movements. The same could be linked to the movement of fishermen who traveled from Kulachal and moved to north. Being outsiders they do not fall under the local institutions like the "kadal kodathy" and the claim is that "we are exempted and have permission from the church" is a matter of concern. The fishermen see the sea as the one owned by the church and when they pay their contributions and the The auction amount shares to the church they feel; that every thing is legal. The schedule 1 species is auctioned every day in Vizhinjam fish landing and the meat is sold locally. The fishermen earn about 125 rupees by selling one turtle and the loss to the marine life and the conservation value is immense.

One could also thus see a marked difference in the coast. North of Ernakulam the turtle enjoys better protection and the incidences of turtle kills come down and poaching is limited to occasional lifting of nests/eggs. The same gets better in

various pockets and turtle is safe. But the situation in the south is very threatening. In Poovar the fishermen go out and catch the turtles and this stretch from Poovar to south to Kulachal is literally a graveyard of turtles.

9. References

1. Edited by Peter L Lutz and John A Musick, 1997, The Biology of Sea Turtle, CRC Press, 432.
2. IUCN, Otter Spec.Group Bull. Vol.12/oct1995, WWF, 43
3. 994, The Turtle Beach, Learners press, 48
4. Indraneil das, 1985, Indian Turtle a Field Guide, WWF, 119
5. J C Daniel, 1983, The Book of Indian Reptiles, BNHS, 141
6. Proceedings of The Workshop on Sea Turtle conservation, 27-29 Feb, 1984, CMFRI,119
7. Chilikka Development Authority, Chilika, 12
8. Wild life Wing Forest department Orissa, 2001, A Quarter Century of Sea Turtle Conservation in Orissa, 34.
9. Sanjeev chanda and Chandraskhar Kar, 1999, Bhitarkanika : Myth and Reality, Nataraj Publishers, 387
10. Proceedings of the National Workshop Bhuveneswar April 2001, GOI-UNDP Sea Turtle project, WII, 103
11. Edited by Karen L Eckert, karen A Bjorndal, F Alberto Abreu-Grobois and Marydele Donnelly, 1999, Research and Management Techniques for the Conservation of Sea Turtles, IUCN/SSC Marine Turtle Specialist Group, 235
12. CMFRI bulletin 35, Feb-1984, Sea Turtle Research and Conservation, CMFRI, 82
13. Edited by Karen A Bjorndal, 1995, Biology and Conservation of Sea Turtles, Smithsonian Institution Press, 615
14. A Andrews, 2001, The Pearl of the Sea, Sophia Publishers, 115
15. Gabriele dietrich and Nalini Nayak, 2002, Transition or Transformation, Dept of Social Analysis,Tamil Nadu Theological seminary Madurai, 183
16. Francois Houtart and Nalini Nayak, 1988, Kerala Fishermen-Culture and Social Organisatin, P C O Centre Trivandrum, 117
17. P C O, Proceedings of the workshop on Coastal Area Development Authority- Form and Character, 2002, Fisheries Research Cell, 12
18. T K Velupillai, The Travencore State Manual, Chapter 5, 297-298
19. T K Velupillai, The Travencore State Manual, Chapter X1X, 451-452
20. Sreedhara Menon, District gazatteer, 52
21. Accounts Relating to the Sea Borne Trade and and Borne Trade in Travencore, Dec-1942
22. Accounts Relating to the Sea Borne Trade and and Borne Trade in Travencore, Mar-1943
23. D Babu Paul, 1987 A Queens Story, 7-8
24. V Nagamayya, 1989, The Travencore State Manual, vol-1, 134
25. K P Padmanabha Menon, Histiory of Kerala, 305

26. T V Sivaraman, 1970, Frogs and Turtle earn Forein Exchanges, Indian Express, April-5
27. S K Talukdar, B Duttagupta and G Dasgupta, The Red Data Book On Indian Animals, 404
28. M A Smith, 1974, The Faunna of British India Including Ceylon and Burma, vol-1, 60
29. Albert C L G Gunthur, The Reptiles of British India, 51-55
30. T S N Murthy, Illustrated Encyclopedia of The Reptiles of India
31. Adoor K K Ramachandran Nair, 1986, Kerala State Gazateers, 254
32. A One day Seminar on Conservation of Marine Turtles, 31 Dec 1998, Theeram, Mictra, Equations,
33. Shailendra Yeshwant, Turned Turtles Olive Ridleys in Trouble, Sanctuary, vol xv11 no-3, 1997
34. Karthik shankar,1999, Birth & Death The Olive Ridleys of Orissa, Sanctuary vol x1x, june
35. Bhitarkanika Ports Threatens olive Ridleys Turtle nesting grounds, sanctuary feb 2001
36. B Pandav et al, 1997, Mortality of Olive Ridley Turtle due to incidental capture in fishing nets along the Orissa Coast, FFI, Oryx 31(1), 32-36
37. B Krishna Pillai, 1997, On the Nesting site and hatchlings of Olive Ridley turtle Observed at Muller, Near Vizhinjam, South west coast of India, MFRS, No146
38. Mattu N Madhyastha, B K Sharath and I Jayaprakash Rao, Preliminary Studies on Marine Turtle Hatchery at Bengre Beach, Mangalore, Mahasagar-Bulletin of the National Institute of Oceanography, 19(2) 1986 137-140
39. Abraham et al, Status of Sea Turtles along the Pondichery coast, Hamadryad, vol-24 p43, 1999
40. E G Silas and M Rajagopalan, 1986, Olive Ridley hatchlings Return to the Sea, hornbill 1986(3)
41. R Banerjee, BNHS V-82 1985
42. S Valliappan and Romulus Whitaker 1974, Olive Ridleys On the Coromandel Coast, Madras Snake Park, 12.
43. S K Raut, Net Bound Death Of Marine Turtle Off West Bengal Coast During 1984-1985, BNHS V 83 1986
44. Mathai V D , Malabar Fisheries. An Over View. MICTRA
45. Marine turtle News Letter, No76, Jan 1997, 32
46. Marine turtle News Letter, No93, July 2001, 52
47. Marine turtle News Letter, No91, Jan 2001, 24
48. Marine turtle News Letter, No83, Jan 1999, 28
49. Marine turtle News Letter, No82, Oct 1998, 28
50. Marine turtle News Letter, No73, Apr1996, 36
51. Marine turtle News Letter, No77, Apr 1997, 32

52. Marine turtle News Letter, No79, Jan 1998, 36
53. Marine turtle News Letter, No80, Apr 1998, 20
54. CESS, 1 995, Coastal Zone Management Plan of Kerala
55. Adrian Stabler, 1997, Tales From The Bush, BBC Wild Life, P 90
56. Marine Turtles In Australia, Australian Nature Conservation Agency
57. GOI-UNDP Sea Turtle Project, A Workshop for the Development of a national sea turtle conservation action plan , Apr 9-10, 2001, Bhuveneswar, Orissa, WII
58. Coastal Area Development Authority, Report, 1996, Govt of Kerala
59. Marine Fisheries Information Services, No 64, 1985
60. Marine Fisheries Information Services, No 145, 1996
61. Marine Fisheries Information Services, No 152, 1998
62. Marine Fisheries Information Services, No 150, 1997
63. Marine Fisheries Information Services, No 157, 1998
64. Marine Fisheries Information Services, No 7, 1979
65. Marine Fisheries Information Services, No 33, 1981
66. Marine Fisheries Information Services, No 28, 1981
67. Marine Fisheries Information Services, No 118, 1992
68. Marine Fisheries Information Services, No 122, 1993
69. Marine Fisheries Information Services, No 123, 1993
70. Marine Fisheries Information Services, No 130, 1994
71. Marine Fisheries Information Services, No 138, 1995
72. Marine Fisheries Information Services, No 140, 1995
73. Marine Fisheries Information Services, No 162, 1999
74. Marine Turtles of Sri Lanka, CCD-gtz, 13
75. CMFRI Bull-35, Sea Turtle Research and Conservation, 1984, 82
76. Scientific American,1998, The Oceans, 112
77. Sanctuary, vol xx No1 Feb-2000, 84
78. B C Choudary, S Bhupathy, 1993, Turtle Trade in India, TRAFFIC,WII, WWF, 50
79. K Balan et al, , Motorisation of Country crafts in Kerala-an impact study, CMFRI, No45, 74
80. E C Mohapatra, Heavy Metal Toxicity in the Estuarine, Coastal and Marine Ecosystems of India, CMFRI, no 69, 121
81. P P Pillai and Biju Parakal, Pelagic Sharks in the Indian Seas- Their Exploitation, Trade, Management and Consevation, CMFRI, No 70, 2000, 95
82. Karthik Shankar, Nature Watch-Tracking Turtles through Time And Space, Resonance june 2002, 53-66
83. C Michael Hall , Trends in Ocean and Coastal tourism : the end of the last frontier, 2001 Ocean & Coastal Management 44, 601-618

84. Nick Harvey et al, 2001, The role of Australian Coastcare Program in community based coastal management : a case study from south Australia, Ocean & Coastal Management 44, 161-181
85. CMFRI bul-31, Mud banks of Kerala Coast, Apr-1984, 74
86. Marine turtle News letter, No-96, Apr 2002, 40
87. Chandy Abraham, Preliminary observation on the nesting of the Olive Ridley sea Turtle on the Madras Coast, Hamadryad vol-15 no-1 p10-12, 1990
88. Conservation of Sea Turtles on the Madras coast, Marine Turtle News Letter, 1994, No64 P3-6
89. Kenneth J Lohmann, How Sea Turtle Navigate, 1992 Scientific American Jan-, p 100-106
90. Selina S Heppell et al, Models to Evaluate Headstarting as a Management tool for long lived Turtles, 1996-Ecological Applications, 6(2) p556-565
91. New fears for the Future of Sea Turtles in the Caribbean, 1998 Aug-Peoples Trust for Endangered Species.
92. Nat B Frazer, Sea Turtle conservation and Halfway Technology, 1992 Conservation Biology vol-6 no 2, p179-184
93. Bivash pandav et al , The Olive Ridley Sea Turtle in Orissa : An urgent call for an intensive and integrated conservation programme, 1998 Current science, vol 75 no-12, Dec.p 1323-1327
94. The MTSG Bulleetin no-6, Nov 1995
95. The MTSG Bulleetin no-5, Aug 1995
96. The MTSG Bulleetin no-4, May 1995
97. The MTSG Bulleetin no-3, Feb 1995
98. Le Dien Due and Steven Broad, Exploitation of Hawks bills turtles in Vietnam, 1995 TRAFFIC Bulletin vol 15 no-2, P 77-82
99. Sea Turtles Products A Burning issue in Zanzibar, 1996 TRAFFIC bulletin vol-6 no-1, p 7
100. Sally E Solomon et al, A Management Plan to Increase the Hatchability of Marine Turtles Eggs,,29
101. Sea food News Letter,1987,vol ixxiv, no-6 , 40
102. Down To Earth, 1999,Nov 15, 60
103. Lessons Learned from Practicing Integrated Coastal Management in South east Asia, 1998 Ambio vol 27 no 8, P 599-610
104. Marine Fisheries Information Services, No 50, 1983
105. Karthik Shanker, Its Turtle time in Orissa gain, Kachappa, no1 Jan 1999
106. The Texas turtle Murders, 1998, BBC wild life, p 28
107. Sathish Bhaskar, The Status and Ecology of Sea Turtles in the Andaman and Nicobar Islands, Madras Crocodile Bank, 37

108. Edited by N G Menon and C S G Pillai,1996, Marine Biodiversity Conservation and Management, CMFRI , 399
109. K K P Panicker et al, Comparative Economic Eficiancy of Different Types of Mechanised Fishing Units Operating Along Kerala coast, J.Mar.biol.India 1990, 97-106
110. K J Mathew et al, Exploratory survey along the south west coast of india with reference to the use of Try net, Indian journel fisheries,1969,110-116
111. M D K Kuthalingam et al, Observations on the Catches of the Mechanised Boats in Neendakara, 1978 Indian Journal of fisheries, 98-108
112. Fr Jose puthenveed, 1985, TheTheology of Fisherman, 5-23
113. P RG Mathur, 1977, The Mappila Fisherfolk of Kerala, 11-13
114. P RG Mathur, 1977, Fishermen's Knowledge of the Marine Environment, The Mappila Fisherfolk of Kerala, 22-63
115. P RG Mathur, 1977, The Mappila's Knowledge of climatic conditions and cosmology, The Mappila Fisherfolk of Kerala, 64-127
116. P RG Mathur, 1977,Technology of Fishing, The Mappila Fisherfolk of Kerala, 129-181
117. P RG Mathur, 1977, Organisation of Fishing, The Mappila Fisherfolk of Kerala, 182-213
118. Arne Martin Klansen, Kerala Fishermen & the Indo NorwegianPilot Project, 35-43, 119-197
119. T k Velupillai, The Travencore State Manual, Chapter xvii, 391-397
120. T k Velupillai, The Travencore State Manual, Chapter xiv, 45-47
121. T k Velupillai, The Travencore State Manual, Chapter xxiii, 609-611
122. T k Velupillai, The Travencore State Manual, Chaptexxiii, 632-633
123. Sreedhara Menon, District gazatteer, 271-273
124. Sreedhara Menon, District gazatteer, 346-353
125. P K Dinesh kumar, 1989, Our Changing Coastline, Science reporter,vol 26, no 5
126. Techno-socio-Economic Survey of Fisherfolk Of Kerala, 1990, Dept of Fisheries Kerala, 20-41
127. Padmanabha menon, History of Kerala, 529-539
128. Padmanabha menon, History of Kerala, 461-477
129. T k Velupillai, The Travencore State Manual, Chapter xix, 430-463
130. S H Prater et al, 1931, The Fish supply of The West Coast of India, BNHS vol xxxv. 77-88
131. E G Silas, 1948, On a collection of Fish from Travencore, BNHS vol 48, 792-797
132. M S Rajagopalan et al, 1992, Productivity of the Arabian Sea Along The South West Coast of India, Bull.Cent.Mar.Fish.Res.Inst, 9-37
133. Threatened Animals,. 1994, IUCN Red list, 76
134. The IUCN Amphibia-Reptilia Red Data book, 209-210

135. Sehaiyana, ENVIS News letter 2001, vol-9 no-1, 20
136. Kachhapa, no 4, Feb 2001, 28
137. Kachhapa, no , oct 2000, 28
138. Kachhapa, no 2, jan 2000, 16
139. Scott D Whiting and Jefrey D Miller, Short Term Foraging Ranges of Adult Green Turtles, 1998,Journal of Herpatology, vol 32(3), 330-337
140. J Frazier, Observations on the stranded Green Turtles in the Gulf Of Kutch, BNHS 1989, vol86(2), 250-252
141. Steve A Jhonson et al, reproductive ecology of the Florida Green Turtle : Clutch Frequency, 1997Journal of Herpatology, vol30, no 3 , 407-411
142. Mark A Read et al, Body temperature and winter feeding in Immature Green Turtles in Moreton bay,southern Queensland, 1996, Journel of Herpatology, vol 30(2), 262-265
143. Nicholas J Pilcher et al, Reproductive Biology of Green Turtles at Ras Baridi,SaudiArabia, 2000,Herpetological Review 31(3), 142-147
144. Christopher Starbird, Testudines, 2000 Herpetological review 31(1), 43
145. Biswajit Dutta, Leatherback's Nesting under Threat, 1996 Cobra vol 23, 10-15
146. Arjun sivasunder and K V Devi Prasad, Placement and Predation of Nest in Leatherback Sea Turtles in The Andaman Islands, 1996 hamadryad vol 21 p 36-42
147. S Krihnapillai et al, Leatherback turtle released back in to the sea, Seshaiyana, vol-9 2001, 14
148. National Policy on Fisheries Bycatch, 1999, Ministerial Council on Forestry fisheries and Aquaculture,
149. Michael G Frick, Caretta Caretta, 2000, Herpatological Review 31(2), 102
150. Anthony R Preen, Infaunal Mining : A Novel Foraging Method of Loggerhead Turtles, 1996 Journel of Herpatology vol 30(1), 94-105
151. Joanna Grand et al, When relocation of logerhead Turtles Nests Becomes a useful Strategy, 1997 Journal of Herpatology vol 31 , 428-435
152. Archie Carr, Rips, FADS, and Lttle Loggerheads, BioScience vol 36 no 2, 92-100
153. Effects of Power plant construction and operation on the nesting of the Loggerhead sea Turtle, Copeia 1986, 813-816
154. Garry Day and Mathew Campbell, Another yea of TED and BRD tests in the Northern Prawn Industry, 1999, Fishing Boat world, 9-11
155. A Guide to Bycatch in Australian Prawn Trawl Fisheries, 31-35
156. Pritwiraj Misra, Bhitarkanika Imperilled Paradise, Sanctuary vol xiv, no2 1994
157. Vijay Gopal and Ajay Shekar, Maharashtrian rhapsody, Sanctuary vol xiii no 2, 28-35
158. Pankaj Sekhsaria, South bay-Great Nicobar Island, Sanctuary vol xv no 1, 34-41
159. Brian Groonibudge, Indias sea Turtle In World Perspective, 1985 Syposiam on Endagered marine animals and marine parks , vol 2
160. Turtle Trouble, India Scan, 65

161. T S N Moorthy, Curious reptiles of Andaman and Nicobar Islands, Science Reporter 1989, vol 26 no 3, 166-168
162. Banka Behary Das, Tragedy for Turtles, Sanctuary 1998,vol xviii, no 4,
163. More Trouble in Orissa, Sanctuary, 1998 vol xviii, no 1,
164. From Sea Shining sea, Sanctuary 2000 vol xx no 1.14-26
165. Death on our beaches, Sanctuary 2000, vol xx, no 3, 254
166. Claude alvares, Reflections on a Goan Beach,Sanctuary 2000, vol xx,no 1, 38-47
167. Umbergaon, Sanctuary 2000, vol xx no 1 , 80
168. Turtle man of Orissa, Sanctuary 2000,vol xx , no 4, 18-21
169. Indraneil Das, Indias turtles and Tortoises, sanctuary 1995 vol xv no 3, 35-41
170. Pankaj Seksharia, South Sentinel, Sanctuary 2000, 42-47
171. The red data book on Indian Animals, ZSI, 395-439
172. M A Smith, The Faunna of British India, 48-75
173. Albert C L G gunther, The Reptials Of British India , 51-55
174. Romulus Whitaker, Captive rearing of Marine Turtles, BNHS 1979 vol 76,163-166
175. G K Kurian, Turtle fishing in the Sea around Krusadai Island, 1950 BNHS, vol 49(3), 509-512
176. M N Acharji, Edible Chelonians and their Products, 1950 BNHS vol 49(3), 529-532
177. Robert Parker Hodge etal. Occurrence of Marine Turtles in Alaska waters 1960-1998, 2000 Herpatological review 31(3), 148-151
178. J Sean Doody et al, A Novel Technique for gathering Turtle Nesting and Emergence Phenology Data. 2000 Herpatological review 31 (4), 220-222
179. Turtles, BNHS 1958 vol 55(2). 219
180. Ali Reza Khan, The Holy Turtles of Bangaladesh, 1980 Hornbill 7-11
181. S Bhasker, Sea turtles and other marine life in Lakshadweep, hornbill 1978, 21-26
182. R J Ranjit Daniel et al, The Herpatofaunna of the Great Nicobar Island, 1996 Cobra, vol 25, 1-4
183. Erich K Stabenau et al, Sex ratios from stranded sea Turtles on the Upper Texas Coast, 1996 Journal of Herpatology, 427-431
184. E K Nareswar, Evaluation of Sea Turtle Nesting Beaches for Promoting Participatory conservation at Sundervan Beyt Dwarka, india, 1997 Hamadryad vol 22(2), 121-122
185. Lal Mohan , Marine Turtles resources, CMFRI - 34, 98-99
186. Daniel Simberloff, Flagships, Umbrellas, and Keystones : Is single species management passe in the landscape Era, Biological conservations vol 83 pp 247-257
187. J Frazier, Exploitation of Marine Turtles in the Indian ocean, Human Ecology , 1980, vol-8 no.4, 329-369
188. N Mrosovsky, How Turtles find the Sea, Science Journal reprint1967, 1-7
189. M Rajagopalan, et al, Incidental Catch of Sea Turtles in India, CMFRI, 8-16
190. Robert P Van Dam, SurfacingBehaviour of the Marine Turtle Eretmochelys imbricata, 1997 Journal of Herpatology vol 31(2), 313-317

191. Pamela T Plotkin et al, Reproductive and Developmental Synchrony in Female Lepidochelys olivecea, 1997 Journal of Herpatology vol 31(1), 17-23

192. Sudhakar Kar, A Note on a Hawksbill Turtle at gahirmatha beach of Bhitarkanika wild life sanctuary, 1986 BNHS vol 83(3), 670

193. Sathish Bhaskar, Renesting Intervels of the Hawks bill sea turtle on South reef island, Andaman Islands, 1996 Hamadryad vo 21, 19-22

194. Edited by Manion Harless et al, In Turtles, perspective and Research, Popilation Dynamics of Sea Turtles, 1979, 523-541

10. Anexures-1

Fish catch 1969 - 1989

Year	Total	Mechanized	%	Traditional	%
1969	2,94,787	28,117	9.6	2,66,610	90.4
1970	3,92,880	52,571	13.6	3,40,309	86.6
1971	4,45,347	7,291	10.6	3,98,056	89.4
1972	2,95,618	38,648	13.0	2,56,970	87.0
1973	4,48,269	93,659	20.9	3,54,610	79.1
1974	4,20,257	1,01,412	24.1	3,18,815	75.9
1975	4,20,836	1,80,111	42.8	2,40,725	57.2
1976	3,31,047	58,717	17.7	2,72,330	82.3
1977	3,45,037	1,07,424	31.1	2,37,613	68.9
1978	3,73,339	1,17,532	31.5	2,55,768	68.5
1979	3,30,509	94,779	28.7	2,35,730	71.3
1980	2,79,543	1,35,305	48.7	1,44,238	41.6
1981	2,74,395	96,321	35.1	1,78,074	64.9
1982	3,25,367	1,48,240	45.6	1,77,127	54.4
1983	3,85,275	1,70,869	44.3	2,14,406	55.7
1984	4,24,717	1,42,551	33.6	2,82,167	76.4
1985	3,32,503	1,14,273	34.4	2,18,230	65.6
1986	3,35,856	1,17,565	35.0	2,18,291	65.0
1987	2,83,154	95,843	33.8	1,87,311	66.2
1988	4,68,808	4,36,463	93.1	32,345	6.9
1989	6,47,526	6,13,960	94.8	33,566	5.2

10. Anexures - 2

ARTISANAL SECTOR : GEARS TYPE

1. Shore seine
2. Gill nets
    - (a). Large
    - (b). Medium
    - (c). Small
    - (d). Very small
3. Trammel net.
4. Boat seine
    - (a). Thattumadi
    - (b). Vattavala
    - (c). Double net
5. Ring seine
    - (a). Used in plank canoes / plywood canoes
        - (A)Ring vala (sardine/mackerel net) Large/Medium
        - (B)Choonda vala (anchovy net)
    - (b). Used on dugouts / plywoods
        - (A)Rani vala (sardine/mackerel net)
        - (B)Manduvala (anchovy net)
6. Mini Trawl
7. Hook & line

10. Anexures - 3

MAIN FISH LANDINGS IN KERALA COAST

Kasaragod District

1. Manjeswaram
2. Koipady (kumbala)
3. Nellikunnu - Kasaba (Kasaragod)
4. Kottikulam
5. Bella – Hosdurg
6. Thaikadapuram

Kannur District

1. Pudiyangadi
2. Azheekal
3. Mopila Bay
4. Chalil Gopal Petha
5. Thalai

1. Mahe (Pondichery)

Kozhikkode District

1. Chombal
2. Valiyamangad – Cheriyamangad
3. Puthyapa
4. Velliyil – Thoppiyil
5. Beypore

Malappuram District

1. Alungal (Chettipady)
2. Elaram (Tanur)
3. Ponnani

Trissur district

1. Blangad (Chavakad)
2. Vadanapally
3. Munnupeedika
4. Azheekode

Ernakulam District

1. Munambam
2. Vypin
3. Fort Kochi

Alleppy District

1. Pallithode (chappakadavu)
2. Thaikkal
3. Thupoly
4. Alleppy
5. Thottappally
6. Pallana
7. Azheekal

Kollam District

1.Neendakara

2. Thankasseri

Trivandrum District

1. Edava
2. Anjego
3. Chirayinkil
4. Perumathura (Mariyanad)
5. Valiathura
6. Poonthura
7. Vizhinjam
8. Poovar
9. pozhiyur

10. Anexures - 4

List of Range Offices which have coastal area under their jurisdiction

Name of Division	Name of Range Office
Thiruvananthapuram	Paruthipally Palode
Ranni	Ranni
Punalur	Anchal Pathanapuram
Konni	Konni
Malayattoor	Kodanadu
Vazhachal	Athirappally
Chalakkudy	Palappilly Vellikkulangara
Thrissur	Vadakkanchery Pattikkad
Nilambur North	Edavanna
Nilambur South	Kalikavu
Kozhikkode	Peruvannamoozhi
Kannur	Kannavam Kottiyoor Thaliparamba Kanjangad Kasargod

10. Anexures - 5

LIST OF PANCHAYATS/MUNCIPALITIES/CORPORATIONS (with sea frontage)

	Thiruvananthapuram		***Kollam***
1	Edava	1	Alappadu
2	Varkala Muncipality	2	Karunagapally
3	Vettur	3	Panmana
4	Anchuthengu	4	Chavara
5	Chirayinkeezhu	5	Neendakara
6	Kadinamkulam	6	Sakthikulangara
7	Attipra	7	Kollam Muncipality
8	Thiruvananthapuram Corporation	8	Eravipuram
9	Thiruvallam	9	Mayyanadu
10	Venganoor	10	Paravoor Muncipality
11	Vizhinjam	11	Poothakulam
12	Kottukal	12	Mynagapally
13	Kanjiramkulam		
14	Karumkulam		
15	Poovar		
16	Kulathur		
17	karode		
	Alappuzha		***Ernakulam***
1	Pattanakkadu	1	Vadakkekara
2	Kadakkarapally	2	Kuzhupally
3	Cherthala Muncipality	3	pallipuram
4	Cherthala South		Edavanakadu
5	Mararikkulam North		Nayarambalam
6	Mararikkulam South		Njarakkal
7	Ariyadu		Elangunnappuzha
8	Alappuzha Muncipality		Kochi Corporation
9	Punapra		Chellanam
10	Ambalappuzha		Thripunithura Muncipality
11	Purakkadu		
12	Thrikkunnapuzha		
13	Arattupuzha		
14	Thuravoor		

Thrissur		***Malappuram***	
1	Punnayurkulam	1	Vallikunnu
2	Punnayur	2	Parappanangadi
3	Chavakkadu Muncipality	3	Tanur
4	Orumanayur	4	Thanalur
5	Engandiyur	5	Vettom
6	Vadanapally	6	Puvathur
7	Thalikkulam	7	Ponnani Muncipality
8	Nattika	8	Ezhuvathurthi
9	Valappad	9	Veliyamkode
10	Kaipamangalam	10	Perumpadappu
11	Perinjanam		
12	Mathilakom		
13	Sreenarayanapuram		
14	Edavilangu		
15	Eriyad		
16	Edathiruthy		

Kozhikkode		***Kannur***	
1	Azhur	1	Karivellur-Peralam
2	Onchiyam	2	Ramanthali
3	Chorode	3	Madai
4	Vadakara Muncipality	4	Mattul
5	Payyoli	5	Azhikkode
6	Thikkodi	6	Chirakkal
7	Moodadi	7	Pallikkunnu
8	Quilandy Muncipality	8	Kannur Muncipality
9	Chengottukaru	9	Edakkad
10	Chemanchery	10	Muzhuppilangadu
11	Elathur	11	Thalasseri Muncipality
12	Kozhikkode Corporation	12	Kodiyeri
13	Beypore	13	New Mahe
14	Feroke	14	Dharmadam
15	Kadalundi		

Kasaragod			
1	Manjeswar		
2	Meenja		
3	Mangalpady		
4	Kumbala		
5	Morgal-Puthur		
6	Uduma		
7	Pallikkara		
8	Ajanoor		
9	Kanjangadu Muncipality		
10	Nileswar		
11	Kasaragod Muncipality		
12	Valiya Paramba		
13	Padane		
14	Chemnad		
15	Cheruvathur		

10. Anexures - 6

List of Coastal Panchayats/Muncipalities (*with tidal effect*)

Thiruvanathapuram District

1. Vakoom
2. Azhoor
3. Kadakkavur
4. Kizhuvellam

Kollam District

1. Mandrothuruth
2. Perinad
3. Perayam
4. East Kallada
5. Kundara
6. Therikkadavoor
7. Thrikkareeva
8. Thekkumbhagam
9. Clappana
10. Kallada West
11. Thodiyoor
12. Devikulangara
13. Ochira
14. Kulasekharapuram
15. Thevalakkara
16. Kottamkara

Alappuzha District

1. Ezhupunna
2. Kadamthuruthi
3. Kuthiathode
4. Aroor
5. Vayalar
6. Arookutty
7. Perumbalam
8. Panavally
9. Thaikkathessery
10. Chinnam-Pallipuram
11. Karthikapally
12. Kayamkulam Muncipality

Ernakulam District

1. Mulavakad
2. Chennamangalam
3. Chittathukara
4. Kadamakudy
5. Cheranathur
6. Kumbalangi
7. Maradu
8. Kumbalam
9. Udayamperur
10. Paravoor Muncipality

Thrissur District

1. Kadappuram
2. Manalur
3. Anthikkad
4. Tanniyam
5. Kattur
6. Padiyur
7. Vellangallur
8. Methali
9. Kodungallur Muncipality

Malappuram District

1. Mooniyur
2. Thenhippalam
3. Edappal
4. Matanchery
5. Tanur Muncipality

Kozhikkode District

1. Enamala
2. Maniyur
3. Thurayur
4. Kunnamangalam
5. Peruvayal
6. Cheruvannur-Nallalam
7. Olavanna

Kannur District

1. Kunhimangalam
2. Ezhome
3. Cheruthazham
4. Cherukunnu
5. Kannapuram
6. Kalliassery
7. Pappinissery
8. Narath
9. Andur
10. Pattuvam
11. Pariyaram
12. Valapatanam
13. Puzhathi
14. Chelora
15. Chembilode
16. Kadambur
17. Pinarayi
18. Eranholi
19. Payyanur Muncipality

Kasaragod Muncipality

1. Thrikkarippur

Kottayam District

1. Chempu
2. Maravanthuruthi
3. Udayanapuram
4. Tirumani-Venkitapuram
5. Thalayagham

10. Anexures - 7

JURISDICTION OF FISHERIES OFFICERS

District	No.	Address	Villages Under Jurisdiction
Thiruvananthapuram	1	Fisheries Officer Poovar Near St.Antony's Community Hall Poovar .P.O	Kollancode South Paruthiyoor Poovar Karinkulam Kochuthura
	2	Fisheries Officer Pallam Near Pallam Church Pallam Jn. Pulluvila. P.O	Puthiyathura Pallam, Pulluvila Chowarw Adimalathura
	3	Fisheries Officer Vizhinjam Vizhinjam Ice Plant Vizhinjam .P.O	Vizhinjam South Vizhinjam North Kovalam,Panathura
	4	Fisheries Officer Valiathura Cheriathura Jn Valiathura.P.O	Poonthura Bheemapally Cheriathura Kochuthope Valiathope Sankhumukham
	5	Fisheries Offi cer Vettukad Near Vettukad Church Community Hall Vettukad P.O.	Vettukad Kochuveli Valiaveli Pallithura
	6	Fisheries Officer Puthanthope M.U.C.S. Puthenthope P.O	Vettuthura Puthenthope Vettyathura Mariyanad Puthukurichi Perumathura

	7	Fisheries Officer Kaikkara Mastyabhavan Near St.Joseph High School Anjengo.P.O	Thazhampally Poothura Anjengo Mampally Kaikkara Arivalam
	8	Fisheries Officer Chilakkoor Maithanam Varkala	Vettoor Chilakkoor Odayam Edava
Kollam	9	Fisheries Officer Mayyanad Near Electricity Office Mayyanad P.O	North Paravur South Paravur Iravipuram South Iravipuram North Mayyanad
	10	Fisheries Officer Thankasseri Thankasseri P.O	Pallithottam Port Kollam Mudaakal Vadi, Thankasseri Kannimel
	11	Fisheries Officer Neendakara Mastyabhavan Neendakara P.O	Sakthikulangara Puthanthura Neendakara Karithura Kovilthottam Ponmana
	12	Fisheries Officer Cheriyazheekal Mastyabhavan Cheriyazheekal P.O	Vellanathuruth Pandarathuruth Cheriyazheekal Alappad
	13	Fisheries Officer Kuzhithura Zrayikkode Azheekal P.O Karunagappally	Kuzhithura Parayakadavu Zrayikadavu Azheekal
	14	Fisheries Officer Kulasekharapuram	Marathur –Kulangara Kulasekharapuram

		Mini Civil Station Karunagapally	Karunagapally taluk - Inland
	15	Fisheries Officer Padappakkara Panchayat Shopping Complex Kundara P.O	Inland Places except KNPY in Kollam Dist,& inland Places in TVM Dist.
Kottayam	16	Fisheries Officer Kumarakam Puthan Parambil Building,Pallichanda Kumarakam P.O	Inland places of Kottayam,Changanassery ,Kanjirappaly taluk in Kottyam dist& Patanamtitta Dist.
	17	Fisheries Officer Vaikkom Mastya Bhavan, Vaikkom.P.O	The whole placeses of Vaikkom ,Meenampil Revenew taluk & Idukki dist.
Ernakulam Region	18	Fisheries Officer Kallikkad, Pathiyankara, Trikkunnapuzha P.O	Valiyazheekal,Thar ayilka davu,Kallikkad, Arattupuzha, Pathiyankara
	19	Fissheries Officer Thottapally MAstyabhavan Fish Landing Centre Thottapally	Thrikkunnapuzha, Pallana, Thottapally, Poonthala, Purakkad.
	20	Fisheries Officer Ambalapuzha Ambalapuzha P.O	Ambalapuzha, Neerkunnam, Punnapra South, Punnapra North, Inlands of Kuttanad.
	21	Fisheries Officer Thumpoly Kanjiram Chira Alappuzha	Vadakkal South, Vadakkal North, Kanjiram Chira , Thumpoly South, Thumpoly North, Chettikkad,
	22	Fisheries Officer Thaikkal	Thykkal, Ottamassery, Azheekal, Pallythode

		Andhakaranazhi P.O Chertala.	South , Pallithode North.
	23	Fisheries Officer Chennaveli Chethi P.O Chertala	Kattoor, Pollathy, Chethi, Chennaveli, Arthungal,
	24	Fisheries Officer Kayamkulam (inland) Near MSM College Kayakulam P.O	The whole places of Mavelikkara, Chengannur, Revenew taluk, Inland places of Arattupuzha, thrikkunnapuzha revenew Villages.
	25	Fisheries Officer Muhamma (inland) Thannermukkam P.O, Chertala.	Inland places of Chertala Revenew taluk & Villasges like Komalapuram, Pathirappalli, Kavalur, and Mannamchery.
Ernakulam	26	Fisheries Officer Kannamaly Kandakadavu P.O Ernakulam.	Chellanam, Maruvakkad, Kannamaly, Kandakadavu, Cheriyakadavu.
	27	Fisheries Officer Fort Kochi Mulam, Kuzhi Beach Road,Kochi-2	Manassery, Fort Kochi, Soudi, Palluruthy, Rameswaram, Mattanchery, Kumbalangy
	28	Fisheries Officer Cherai P.O Enakulam.	Munambam, Pallipuram, Cherai, Ayyambilli, Kuzhipily, Pazhangad.
	29	Fisheries Officer Njarakkal Mastyabhavan Near Govt.Hospital Njarakkal.P.O	Edavanakad, Nayarambalam, Njarakkal, Elankkunapuzha, Malippuram, Azheekkal, Ocham Turuth.
	30	Fisheries Officer North Parur(inland)	Whole places of Kothamangalam,

		Thattolil Building, Thattolil Road North Parur P.O	Kunnathunad, Parur Taluk
	31	Fisheries Officer UdayamPeroor(inland) Mangai Udayamperoor P.O Tripunithura	The Villages like Nadama, Thekkum bhagam, Thiruvakulam, Koorikkad, Kanayannur, Mulamthuruthi, Manakunnam, Amballur, Kulayatti, Keechery, Edakkattuvayal, Kaipattur in Kanayannur taluk & whole places of Muvattupuzha taluk.
	32	Fisheries Officer Ernakulam(inland) Fishermen Training centre, Thevara, Ernakulam.	The whole places of villages like Kadamakkuzhi, Mulavukad, Cheranellur, Trikkakara, Edappally North, Edappally South, Ernakulam, Pnithura, Elamkulam, Marad, Kumbalam , Vazhakkala, Kakkanad in Kanayannur taluk.
Thrissur	33	Fisheries Officer Azheekode, Mastyabhavan Azheekode jetty P.O Kodungalloor.	Azheekode, Eryad, Edavilangad, West Vemballoor, Kulimuttam.
	34	Fisheries Officer Kaipamangalam, Perinjanam west P.O Trissur	Perinjanam, Kaipamangalam, Chendrapinni, Valappad(Chapallipuram)
	35	Fisheries Officer Nattika, Valappad P.O. Trissur.	Nattika, Talikkulam, Vadanapally, Engadiyur.

	36	Fisheries Officer Chavakkad Manathala, Thiruvatra, P.O Trissur.	Blangad, Manathala, Kadapuram, Edakkazhiyur, Mandalamkunnu.
	37	Fisheries Officer Trissur (inland) Trissur.	inlands of Chavakad , Kodungallur revenew taluks, whole places of Trissur , Thalapally, Mukundapuram, revenew taluks, & whole revenew villages of Palakad Dist.
Kozhikode Region	38	Fisheries Officer Ponnani(mukkadi) Chana Road, Ponnani Nagaram P.O	Palapetty, Veliyamkode, Puthuponnani, Thekke kadavu, Mukkadi, Marakkadavu, Meentheruv, & inlands of ponnani taluk.
	39	Fisheries Officer Tirur, Paravanna P.O Malappuram.	Purathur, Pallyvalap, Kuttay, Paravanna, Thevar kadapuram, & inlands of tirur taluk & Perinthalmanna taluk.
	40	Fisheries Officer Tanur, Panchayat Shopping Complex, Tanur P.O	Puthiya kadapuram, Cheran kadapuram, Edakadapuram, Ossan kadapuram, Pandarakadapuram, Elarankadapuram, Korman kadapuram and in Tirur taluk north of Anjudi ,Malapuram road,& south of Kurapuzha, And inland places of Tirur taluk
	41	Fisheries Officer Parappanagadi Chettypady P.O	Parappangadi, Arayan kadapuram, Ariyalloor beach, Kadalundi beach,

		Malappuram.	southern places of Kozhikkode & northen places of Kurapuzha ,inlands of Eranad taluk
Kozhikode	42	Fisheries Officer Beypore, Fishing Harbour, Beypore.	Chaliyam, Beypore, Marad, Kappakal, Thykkadapuram.
	43	Fisheries Officer West Hill, Fisheries Station, West Hill. Kozhikode-5	Puthyakadavu, Vellayil, Thoppayil, West Hill, Puthiyangadi, Pallikandy, Pthiyappa south, Puthiyappa North.
	44	Fisheries Officer Koilandy, Anthetta, Near Govt .L.P.S. Myloor P.O. Koilandy	Elathur, Kannankadavu, Edakkulam, Ezhukudikkal, Valiyamangad, Cheriyamangad, Virunnukandi, Koilandy.
	45	Fisheries Officer Thikkodi Thikkodi P.O Kozhokode.	Kollam, Vanmukham, Kadalur, Thikkodi, Meladi, Iringal,
	46	Fisheries Officer Vadakara, Vadakara beach P.O Vadakara -3.	Vadakara south, Vadakara north, Kuriyadi, Muttungal, Madapally, Madakkara, Chompala, Azhiyoor.
	47	Fisheries Officer Kozhikode(inland) Regional Executive Office, West Hill. Kozhikode -5.	inlands of Kozhikode Dist & whole places of Wynad Dist.
Kannur	48	Fisheries Officer Talassery,	Kurichayil, Chalil-gopalpetta, Palissery.
	49	Fisheries Officer Kannur,Fisheries Complex, Kannur-17	Thayyil, Kannur City, Azheekode kadapuram, Mattool.

	50	Fisheries Officer Puthiyangady, Madai P.O Kannur.	Puthiyangady kadapuram, Palakkode kadapuram, Kawai.
	51	Fisheries Officer Kannur (inland) Fisheries Complex, Kannur -17.	inlands of Kannur Dist.
	52	Fisheries Officer Kanjangad,Peelikode, P.O.Maniyatt, Kasaragod.	Trikkaryoor kadapuram, Valiyaparampu, Padanna kadapuram, Kadangod, Thykadapuram.
	53	Fisheries Officer Ajanoor, Kolavayal P.O Kasaragod.	Poonjavi kadapuram, Hosdurg kadapuram, Ajanoor, Pallikkara, Kottikulam.
	54	Fisheries Officer Kasaragod, Kasaba, Adakkathabayil beach, Kasaragod P.o	Kizhoor, Kasaba, Kavugoli, Koipady, Shiria, Manjeswaram, And inlands of Kasaragod Dist