CHAPTER - II

PROFILE OF THE STUDY AREA

This chapter is intended to present a view on the profile of the study area, helping us to understand the background of the research question. It is divided into two parts. This first part portrays a brief profile of Kanyakumari and Thoothukudi District, Tamil Nadu. This second part offers a detailed profile of the fishing sector in its information seeking behavior and welfare schemes that support the fishery sector.

2.1. Profile of the Fishing Villages of Kanyakumari District

Kanyakumari District is one of the coastal districts in Tamil Nadu. It is endowed with fishery resources and human resource. It has fishermen populations of 148539 whose primary occupation is fishing. The annual fish production of Kanyakumari District is approximately 50000 tonnes about 15 per cent of the total of Tamil Nadu. These fishermen are provided with various welfare schemes offered by both Government of Centre and State. It is unfortunate that the fisher folk who contribute to the GDP of our country to the tune of 1.10 per cent continue to live in abject poverty. What is more pitiable is that the well intended welfare schemes of the government in the last 60 years have not been properly utilized due to reasons like disproportionate fund allocation, lack of mechanism to execute it, the cumbersome nature of schemes and lack of awareness. A more prominent reason for the abject poverty of the fisher folk is the linked-credit. Empowering fishermen consists in the offering sustainable economic safety and viability. Due to the lack of economic viability and security mechanism, they continue to be under the clutches of linked-credit and subsequently in poverty.
A brief summary of the profile comprising of its location and demographic features like education, housing, community occupation, welfare scheme, information technology and sources is presented below.

### 2.1.1. Location

Kanyakumari district lies between 77.05° and 77.36° of the Eastern longitude and 8.03 and 8.35 of the Northern latitude. It is situated on the southern extremity of the Indian Peninsula. It has a coastline of 71.5 km extending from Cape Comerin (Kanyakumari) to Arockiapuram on the East coast and from Cape Comerin to Neerodi on the West Coast. The waters of Arabian Sea and Bay of Bengal unite with Indian Ocean at Kanyakumari. Also known as the “Alexandria of East” Kanyakumari has been the cradle of civilization. The Kuzhithurai river, Valliyar and Pazhayar river join the sea in the West coast of this district.

The total area of Kanyakumari District is 1684 Sq.K.ms. It is the 31st west district in Tamil Nadu and 543rd most populous district in India. Give the geographical standing of this district it can be called as a costal district with 47 coastal villages. The following map shows the fishing villages in Kanyakumari district and the sample villages selected for the study.

### 2.1.2. Fishermen Population

Population is one of the most important determinants deciding the growth of any nation. As of 2011, the Kanyakumari district has a population of 18,63,174 of which male and female were 926800 and 936374 respectively. There was an increase of 11.17 per cent in the population compared to the population as per 2001 census. The population density of Kanyakumari District is 1106 persons per sq. Km as against 995.7
persons per Sq.km as per 2001 census. The district also has a high female sex ratio with
1010 females for every 1000 male compared to 2001 census figure of 1014. The
fishermen population is three fourth in the district, leading one to call it a costal district.
Since there are no updated population details of the fishermen, the researcher has used
marine fisheries census 2005 for analysis purpose. It is a healthy sign for the
development of fishery sector with regard to fishing and fishing related activities. The
female population is involved in post harvesting activities like curing, peeling, cleaning,
drying and selling of fish. They contribute only a nominal portion to the total income of
the family. (www.kanayakumari.tn.nic.in)
2.1.3. Fishing Villages

Figure 2.1

Map-1: Coastal Villages in Kanyakumari District
There are 43 fishing villages in this district. Out of which the present study select sample respondents from the villages given below. They are

1) Neerodi
2) Marthandanthurai
3) Vallavilai
4) Chinathurai
5) Thoothoor
6) Thengapattinam
7) Enayamputhenthrurai
8) Enayam
9) Malemidalam
10) Kurumpanai
11) Vaniakkudi
12) Kodimunai
13) Colachel
14) Kottilpadu
15) Kadiyapattanam
16) Muttam
17) Azhikal
18) Rajakkamangalam
19) Pallam
20) Keezhamanakudi
21) Kovalam
2.1.4. Active Fishermen

In general the fishermen population vis-à-vis the category of active fishermen is the pivot of study. Active fishermen are those who are engaged in regular fishing and fishery related activities. The report of Assistant Director of Fisheries, Nagercoil states that as on 2010, the district has 28000 families of the fishermen who are engaged in marine fishing and 2200 families engaged in inland fishing. The fishermen of Kanyakumari district are also noted for their greater ability in deep sea fishing than fishermen in other parts of India.

2.1.5. Types of Houses

Shelter plays an indispensible role for any individual. In yesteryears the fishermen household lived in huts in close proximity to the seashore. However, over the passage of time they began to build tiled and concrete houses. The State Government and philanthropists of various agencies had constructed free houses to fishermen under the free housing scheme by the Government of Tamil Nadu.

2.1.6. Educational Status

Education plays a pivotal role in enhancing the social-economic conditions of an individual, family and society at large. Among 32 districts in Tamil Nadu, Kanyakumari tops in literacy level and education. In Kanyakumari district the male literacy rate is 93.86 per cent while the female literacy rate is 90.45 per cent as per 2011 census. The contribution of European missionaries to education is remarkable and praiseworthy. 82.03 per cent of fishermen are literates, who had completed primary or secondary or above secondary education. It is disappointing to note that the district that tops in
literacy lacks higher education institutions at the coastal belt. Further, the male population goes for fishing even from their childhood due to their poverty. Due to the lack of infrastructural facilities, job opportunities and development in the coastal areas, the coastal population tends to end in fishing and fishery related activities.

2.1.7. Religion

India is a well known secular nation, with unity in diversity. Kanyakumari district is not exempted from this. It fosters Hindus, Christians and Muslims amongst which Christians are predominant. It is said that, this district has the third largest Christian population among all districts in India. Also about one – fifth of the Christian population of Tamil Nadu lives in this district. As three fourth of the landscape of this district is situated along the coastal belt. The inhabitants’ ancestors were highly influenced by the foreign missionaries like St. Francis Xavier, who played a vital role both in the spiritual and the social development of these people. Further historical evidences suggest that people migrated from the east coast and settled in the 47 fishing villages of Kanyakumari district during 16th century. The role of Christianity in the socio-economic lives of fisher folk in Kanyakumari District remains as a force to reckon with which cannot be ignored.

2.1.8. Fishing Crafts

Fishing crafts are the important fishing assets of the fishermen household. A large variety of crafts have been designed for marine and inland fishing in India. The fishing crafts fall into two categories; non-mechanized and mechanized. Non-mechanized crafts are used by small and traditional fishermen, while mechanized crafts are used by the boat owners with modern equipments, designed for deep sea fishing.
Recently, mechanized boats have assumed great capacity with higher horse power and greater facilities due to modern developments.

2.1.9. Fishing Gears/Valai

Another important asset of the fishermen household is fishing gear. Earlier only homemade cotton nets were used. With the advancement of technology, fishermen now use synthetic fishing gears. The variation in its size, strength and form, determines the type and size of fish caught. These fishing gears have been designed to suit the local conditions such as the character and types of the coast line, habits of fish, the proximity of the harbour and demand of fish.

2.1.10. Fishing Seasons

The fishing season for individual fishermen in a year is determined by several parameters. Some of the factors which reduce the number of fishing days are due to bad weather and the consequent roughness of the sea, break downs, repairs of engines, overhauling of hull or engine, social ceremonies, religious festivals and also inter-village and inter-craft conflict regarding fishing in the sea. In Kanyakumari district the fishing season is from August to November and the lean season is from January to March. The period from June to August is the breeding season for most of the species of fish. During June to September, most of the mechanized, and traditional motorized crafts of fishermen in Kanyakumari district migrate to the east and west coast, as the Kanyakumari seashore is too rough to go for fishing.

This district is gifted with around two hundred and twenty species from both fresh and marine waters, of which more than one hundred and forty species are available from marine sector.
Moreover, there has been a wide fluctuation in the annual marine fish production in Kanyakumari district from time to time. This might be due to fish famine, group clashes, Srilankan problems, Koodankulam Nuclear Power Project issue, lack of infrastructural facilities in the coastal belt, migration of fishermen to other states and natural calamities.

2.1.11. Marketing of Fish

Fish being perishable in nature required proper storage and other infrastructural facilities. But in the study area there are no such infrastructural facilities available for immediate disposal of the fish. Therefore the fishermen are forced to sell their produce at lesser rates to the middlemen who inturn sells them at higher rates. Thus the role of middlemen becomes very significant in marketing fish in the study area. The distribution chain is explained in the following figure.

Figure 2.2: Channels of Distribution
(Source: The yoke of linked credit: A study of coastal village in Kanyakumari Dist.)

![Channels of Distribution Diagram]
It is evident from Fig 2.2 that no fisherman can sell the fish directly to the customers in the landing places, since all the craft owner fishermen have market linkage to fishermen “sangam” of fish traders or commission agents. The credit agencies in turn sell the produce to wholesalers, companies, head load vendors and exporting agencies. Kaliakkavilai and Azhakiamandapam are the two important fish market centers in this district. During peak season the fish is sent to the nearby State Kerala and to other districts like Coimbatore, Chidambaram, Madurai, Thichy and Thanjavur in Tamil Nadu.

2.1.12. Income

Income is the primary yardstick that determines the socio-economic conditions of any individual. It is the powerful weapon that makes one’s life safe and secure, protecting an individual from the clutches of money lenders cum traders.

Since the fishermen income is unpredictable, and not sufficient to meet the regular, and unexpected expenses of production and consumption, they end up in credit borrowing. Factors such as lean season, group clash and non availability of fish during the working days, further lead them to have linked credit and thereby resulting in exploitation of fishermen. Lack of proper infrastructure is an added reason for the low economic status of the fisher folk in the study area.

2.1.13. Infrastructural Facilities

The prosperity of an economy highly depends upon the infrastructural facilities and the related services available in the region. Fisheries economy is no exemption to this. Advancement of infrastructural facilities induces economic growth. These
facilities include fish landing facilities, training facilities information facilities in source marketing facilities, uninterrupted power supply, transport, hospitals and bank.

2.1.14. Landing Facilities

There are three major fishing harbors, five minor fishing harbors and five landing jetties.

2.1.15. Fishermen Training Centre

The process of speedy mechanization of fishing crafts calls for an increase in the number of technically trained persons in the field of maintenance, upkeep of inboard/outboard engines and fishing operations in the sea. A fishermen training centre has been established at Colachel on 16th December, 1964 to give specialized training. The duration of the course is 10 months (January to October). This centre offers two types of training to the fishermen namely Modern Fishing Training for 50 fishermen and Junior Mechanical Marine Diesel Engineering for 20 fishermen every year.

2.1.16. Service Station

Maintenance-cum-service centers are very much essential for the upkeep of outboard engines. Though the study area has maximum number of motorized crafts in the State, such services are absent. Tamil Nadu Fisheries Development Corporation (TNFDC) has established two diesel bunks one at Colachel and another one at Kanyakumari to supply fuel to the mechanized boats. Kanyakumari District Fishermen ‘Sangams’ Federation (KDFSF) has set up a workshop at Enayamputhenthurai with the support of South Indian Federation of Fishermen ‘Sangams’ (SIFFS) as a part of their
outboard motor (OBM) servicing network. Three trained mechanics from SIFFS are working in the centre. The spares are imported and supplied by the SIFFS.

2.1.17. Boat Building Centre

At present, there is no government established boat building yard in this district. There are very few boat-building yards owned by private entrepreneurs. Five units are functioning at Chinna Muttom (Fishing Harbor) with an annual production capacity of 20 boats and one at Colachel with a capacity of six boats. One such centre is established at Muttom. For producing canoes (a newly designed small craft) by using plywood to provide sustainable boats against the salty sea water.

2.2. Profile of the Fishing Villages of Thoothukudi District

Thoothukudi is called as a city and a corporation together among the Indian states of Tamil Nadu. Marine fishery, pearl and chunk fishing are famous in this district from time immemorial. The city is also known as “pearl city”. It is a sea port which serves southern Tamil Nadu including the inland cities of Thirunelveli, Nagercoil, Virudhunagar, Ramanathapuram, Madurai etc. It is one of the major sea ports in India with its history dating back to the 16th century. (www.thoothukudi.tn.nic.in)
Fig:2.3: Coastal Villages in Thoothukudi District
2.2.1. Location

Thoothukudi District is situated along the East Coast of India with a coastal length of 163.5 km. forming the final stretch of the Gulf of manner. The coast of Thoothukudi District has 23 fishing villages. Gulf of manner, known for rich biodiversity, contributes notably to the total marine fish landings of Tamil Nadu. Thoothukudi is blessed with wide variety of flora and fauna inhabiting the fragile ecosystems of coral reef and mangroves. Corals and mangroves play a vital role in maintaining the productivity of coastal areas acting as breeding ground.

2.2.2. Origin of the Name

There are three theories as to the origin of the name: Thoorthu (Dig) and Kudi (Drink). The town had no rivers and the only source of drinking water was from wells. “Thoortha” means land “reclaimed” from sea while “ kudi” also stands for “settlement”. Hence “Thoortha kudi”, later it becomes Thoothukudi. It could mean a settlement built on land reclaimed from sea. Now-a-days the city is called “Tuticorin” in English and “Thoothukudi” in Tamil. Thoothukudi is traditionally known for its pearl fishing and ship building.(suyambulingam, et.al.2011)

2.2.3. Climate and Rainfall

The climate of Thoothukudi is neither too hot nor too cold. During the months of April, May and June the Thoothukudi district is hot. During winter, in the months of December and January, the climate is pleasant.
Table-2.1
Climate and rainfall

<table>
<thead>
<tr>
<th>Season</th>
<th>Period</th>
<th>Rainfall millimeters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter period</td>
<td>January – February</td>
<td>47.9</td>
</tr>
<tr>
<td>Hot weather period</td>
<td>March – May</td>
<td>66.4</td>
</tr>
<tr>
<td>South west monsoon</td>
<td>June – September</td>
<td>54.5</td>
</tr>
<tr>
<td>North east monsoon</td>
<td>October – December</td>
<td>490.5</td>
</tr>
</tbody>
</table>

2.2.4. Language

Tamil language is widely used in Thoothukudi distrct.

2.2.5. Salt Production

The district constitutes 70 percent of the total salt production of Tamil Nadu. The share of total salt production of India’s is 30 percent.

2.2.6. Fishermen Population

There are 23 coastal fishing villages in Thoothukudi district of Tamil Nadu and their total population is 69,806.

2.2.7. Fishing Villages

There are 23 fishing villages in this district. The present investigator collects data from the following fishing villages. They are

1. Alanthalai
2. Amalinaagar
3. Keezhavaippar
4. Manapad
5. Periyathazhai
6. Ponnaikayal
7. Singhithurai
2.2.8. Religious Composition of Fishing Villages

The importance of a religion needs no emphasis in a rural society. People attach themselves more sentimental value to religion. The fishermen are no exception to the general phenomenon. Majority of the fishermen from this district belongs to Roman Catholic Christian paravar (Fernando) community. Some of the fishermen are Hindu and a few are Muslim found in some coastal area of Thoothukudi district.

2.2.9. Fishing Crafts

The social-economic conditions of marine fishermen are not at all uniform throughout the district. The ethnic differences in the marine fishermen population with district variation in the crafts and gears used for fishing govern to a great extent the economic conditions of the fishermen.

2.2.9.1. Mechanized Boat

The ownership of mechanized boat refers to the possession of any house holder who owns mechanized boat and uses it for fishing and whose major portion of income consist of owner’s share, earned out of fishing with such boats. The type of Crafts and gears and specific occupation of the fishers are the most important factors which influence the level of income of the fishermen.
2.2.9.2. Fiber Boats

Ownership of fiber refers to the possessions of any householder who owns fiber boat and uses it for fishing and whose major portion of income consist of owner’s share, earned out of fishing with such boats. The type of crafts and gears and specific occupation of the fishers are the most important factors which influence the life. The craft is the most important factor for catching large quantity of fishes.

2.2.9.3. Vallam Craft

Ownership of vallam refers to the possession of the householder who owns the vallam crafts. A primitive and conventional country type fishing craft made of wooden logs bound together without any board engine, is used for fishing in coastal waters. These traditional crafts are of different types each varying in length and shape.

2.2.10. Housing Status of Fishing Workers

The fisher folks are living in isolated habitations lying very close to the seashore. They have a permanent settlement of houses in rows. There is a little space in between the houses and no compound wall around each house. The streets are narrow with uneven ground. This study reveals that majority of the fishermen are living in their own houses having poor housing facilities.

The fishermen villages are living in unhygienic conditions. Most of the houses are small without proper electric lamps, lavatory and tap water facilities. The infrastructural facilities such as health facilities, clean drinking water, and communication are very much lacking in almost all coastal villages.

Most of the families dwell in own houses. The government of Tamil Nadu has provided free houses to the fishermen under the housing scheme.
2.3. Marine Fishermen Welfare Schemes

The Constitution of India emphasizes the importance of protecting the lives of fishermen indicating fisheries as a state subject under item 21 of the state list of Article 246. The major thrust in fisheries development has been of optimizing production and productivity, augmenting export of marine products, generating employment and improving welfare of fishermen and their socio-economic status. Further acknowledging the abject poverty of the fisher folk and the need for intervention, the government of Tamil Nadu has been framing various welfare schemes for the socio-economic upliftment of fishermen community through Fishermen Cooperative Societies. During the budget 2010 the government allocated a sum of Rs.193 crores to the Fisheries Department of 13 coastal districts.

Some of the important welfare schemes of the government are:

- Free Housing scheme
- Mechanization of Traditional Crafts
- National Fishermen savings cum relief Scheme.
- 2000/- Cash Assistance during Fishing Ban Period
- Relief Assistance at the rate of Rs.50/- per day
- Fishermen Personal Accident Insurance Scheme.

2.3.1. Fishermen Housing Scheme

This scheme was introduced by Honorable Minister Thiru. Loudhammal Simon during 1958-1959 at a unit cost of Rs.37000/- to those fishermen who has three cents of patta land but not having an own house. Till 1995-1996, 4341 houses were sanctioned 3636 houses were constructed and handed over to the concerned beneficiaries.
After the Tsunami in 2004, the fishermen were able to construct concrete houses in Tsunami Colony through various welfare schemes. This was sponsored by Government and NGOs in either government property or in church property.

2.3.2. Mechanisation of Tradition Crafts

Mechanisation of Tradition Crafts is a production oriented scheme introduced during the 7th Plan period. The scheme has been modified during the 11th Five Year Plan. The subsidy benefit is extended to both Out Board Motor (OBM) and In Board Motor (IBM) of 8-10 HP. Under this plan, 50 per cent of the unit cost is provided as subsidy subject to maximum of Rs.30,000/- per OBM / IBM, which is share equally by Central and State Governments.

From 2007 to 2010 there is a significant growth in the registration of craft with the Fisheries Department to have license for fishing. The increase in the registration of mechanized craft is due to the supply of 200 liters of kerosene per month to a fisherman at subsidized rates at Chinnamuttom and Colachel villages.

2.3.3. National Fishermen Savings cum Relief Scheme

The earnings of fisher folk are confined to fishing seasons. Therefore they readily borrow money during lean seasons. In order to alleviate the hardship caused to the marine fisher folk, the Government initiated a scheme from June 1, 1982. Under this scheme the beneficiary should be an active fisherman within the age group of 18-60 years and must be a member of fishermen or fisherwomen co-operative society. The beneficiary must pay a sum of Rs.70/- as a monthly subscription for 8 months and Rs.40/- on the 9th month. The State and Central Governments contribute additional amount of Rs.600/- to each fisherman. The total sum of Rs.1800/- will be distributed to each
fisherman and woman at Rs.600/- to each fisherman. The total sum of Rs. 1800/- will be distributed to each fisherman and woman at Rs.600/- per month for three lean months. According to the new G.O. dated on 25.10.2011, in addition to Rs.1800/- a special allowance of Rs.4000/- per family is given during the non-fishing period.

2.3.4. Fishing Ban Period Relief Assistance

The Government has banned mechanized fishing during the period from June 15th every year in the west coast (Rajakkamangalam to Neerodi) and from April 15th to May 29th in the east coast (Arockiapuram to Periakadu) as a regulatory measure to protect the eggs and growth of fishes. During this period, the government offers certain amount of financial support to the fishermen.

Statistics data on the fishing ban period relief assistance to active fishermen with family card. This amount was Rs. 500/- and was increased to Rs. 4000/- in the year 2012-2013.

2.3.5. Daily Assistance to Missing Fishermen Families While On Fishing At Sea.

Under this scheme Rs. 50/- is given as everyday assistance (Rs.1500/- in month) to the dependents of the fishermen who get lost in the sea while they go for deep sea fishing. This relief amount is given for two years. From 2008 to 2011, 61 fishermen were lost in the sea and the members of family received a sum of Rs.1096050/-. Now the amount is increased from Rs. 50 to Rs. 250 per day. The report of Dinakaran daily news paper dated 14th May, 2012 states that from 1990 till date 111 fishermen got lost in the sea. It indicates that the government should take more serious efforts to mitigate this problem and to find out the missing fishermen rather than just being satisfied with offering daily assistance to dependents of the fishermen.
2.3.6. Personal Accident Insurance Scheme

This scheme is available to the members of Fishermen co-operative Society and who are engaged in full time fishing. The premium amount to the tune of Rs.40/- is paid by the individual fisherman and fisherwomen. In case of death a sum of Rs.1,00,000/- is paid to the dependent of deceased and in case of lasting partial disablement Rs.50,000/- is given to the affected fishermen and fisherwoman.

2.3.7. Group Accident Insurance Scheme

Under this scheme the fishermen must be a member of fishermen co-operative society and engaged in full time fishing. The Central and State Government contribute a premium of Rs.50,000/- is paid in the event of death or permanent disablement while a sum of Rs. 25,000/- is paid in case of partial disablement. This relief amount got revised from 11.08.2009 with the premium amount of Rs.30/- per head (State Rs.15 and Centre Rs.15). A sum of Rs. 1,00,000/- is paid in the event of death or permanent disability while a sum of Rs.50,000/- in case of partial disability.

The fishermen who are in the sea are always exposed to natural and manmade calamities. So every year the death toll rate is more than 12 fishermen which requires sea safety measures to protect the life of the fishermen. 26th December, 2014 was a black day in the life of fishermen in the coastal villages and more than thousand people died in the Tsunami. In 2004-05, 119 beneficiaries received the relief fund under Group Insurance Scheme amounting to Rs.5,95,000/-. It indicates that the government should provide safety measures and protect the life of fishermen by establishing effective warning system in every coastal village and also protect the life of fishermen.
2.3.8. Fishermen Welfare Board

Even though, there seems to be many welfare schemes, they are not comprehensive. They remain scattered and poorly co-ordinated. Therefore, a welfare board for fishermen came into existence on 29\textsuperscript{th} June, 2007. Tamil Nadu Fishermen Welfare Board was established to uplift the fisher folk. The total number of fishermen enrolled under this scheme was 48572. The following benefits are offered by the board from its inception.

- Education
- Marriage
- Accidental death
- Natural death
- Funeral expenses
- Up gradation of Maritime Education

2.3.9. Non Governmental Welfare Agencies

The unique role of Catholic Christian church in the study area and its role in welfare schemes cannot be ignored. They take up social welfare schemes along with the spiritual ministry. Thus, fisher folk of Kanyakumari District are supported financially by recognized and unrecognized voluntary organizations in addition to the governmental schemes. Villages from Arockipuram in the east to Mullorthurai in the west are animated by the Kottar Diocese while the village from Erayumathurai to Neerodi are cared by the Trivandrum Diocese. Under the Jurisdiction of Kottar Diocese, there exists kottar Social Service Society (KSSS) and the Trivandrum Diocese are assisted by the Trivandrum Social Service Society(TSSS). The other recognized voluntary agencies
working in the coastal belt are Centre for Appropriate Technology (CAT), Kanyakumari District Fishermen ‘Sangams’ Federation (KDFSF) and Santhidan. Thoothukudi multi social service society(TMSSS) supported to the Thoothukudi fisher folk. (www.coastal peace development.com)

There are also other informal agencies extending support through welfare schemes. They are the youth clubs namely; Saint Catholic Youth Movements, Movement for Coastal Peace Development (CPD), ‘Mukkuvar Munetra Sangam’, ‘Meenavar Nalavazhvu Sangam’ and ‘Muthamil Pengal Munetra Sangam’. These organization render excellent services towards the upliftment and betterment of the fisher folk.

2.4. Information Sources for Fishermen and Fishing Community

Fisheries are gathering information from three types of Information sources. They are conventional sources, Non conventional sources and indigenous sources.

2.4.1 Impact of ICTs on Public Library

Information and Communication Technologies are the combination of information and computer technology, which is successfully being used in library & information centers for various functions and in providing services to the users (Dhiman, 2007; Dhiman and Rani, 2005 & 2007). Information services are also to be well-integrated into basic public library services today. All of us have to provide at least basic reference services and make use of formal networking arrangements to provide more sophisticated levels of question-answering and information providing. Internet has also brought numerous changes in the functioning of libraries, some of the changes that Internet has brought to numerous public libraries, may be enumerated as under:
Library users can access information serviced, including those provided by the public library, from their homes.

Both library professionals and library users have become increasingly reliant on the Internet as an information source.

New users are coming to the public library just to make use of the computers and Internet access. While public libraries appreciate the business, some of these new users pose more of a service challenge than others. The uncontrolled content on the Internet has given rise to public and sometimes staff too, outrage about the “inappropriate” materials available to both purposeful and accidental information seekers.

That outrage has their traditional defense of use of software filters to reduce the likelihood of access to inappropriate materials.

Librarians some times find their traditional defense of intellectual freedom and first amendment rights at odds with own values and those of the community. Searching for information on the Internet requires new skills for both library professionals and library users, resulting in increased and ongoing needs for staff development and for user education. Public service librarians have had to adopt a new educational role as they meet the need to teach library users how to use digital information resources effectively. Librarians need to go through Competency Development programmes in Internet and computer technology era for handling of information and their delivery to the users.
2.4.2 Community News Paper

Nagercoil Village Research Centre (VRC) has been producing Community News Paper (CNP) ‘Namma Ooru Seithi’ since the year 2007 on a fortnightly basis and distributing it to every household in all villages in Kanyakumari District. The Newspaper contains information related to fishing practices, value added products, Questions and Answers documented in Phone-in programmes, guidance to youth / children and agricultural related advisories / practices to farmers. The VRC has been conducting feedback meeting with the readers and adopting their opinions and suggestions. (MSSRF, 2012)

2.4.3 Government fisheries Department: (INDOFOS) Indian Ocean Forecast System

(MSSRF 2012) Indian National Centre for Ocean Information Services (INCOIS) is an Institution under ISRO established specifically for research and development of ocean based information and its dissemination INCOIS for receiving information for reaching to the fisher folk. The PFZ location is obtained from the satellite imageries and parameters studied for surface temperature and aggregation of algae where fish agglomeration is expected. The PFZ spot is provided on decode of Latitude and Longitude, direction and distance. The depth to fish agglomeration is also provided in PFZ information. The OSF information like wind speed, wind direction and wave height is provided by INCOIS using various parameters measured across the region in the Indian Ocean, Arabian Sea and Bay of Bengal. This is very much useful to the fishermen first, to take decision for venturing and then the direction of navigation depending on the wave height, wind speed and direction.
The audio content is made into crisp of less than one minute with the title of the content in the beginning for about 7-10 seconds followed by the main body of the content for about 40-45 seconds. Each message ends with the helpline contact number for calling back to get solutions to their doubts problems from the experts. Content is documented first and then recorded. The audio message is recorded and saved in wave format for easy editing. During lean season, Ban period and non-fishing days other information related to government schemes, marine conservation, fishing technologies and Govt. Announcements are provided as audio messages.

(www.incois.gov.in) Forecast information is disseminated by means of web and e-mail to all the major stakeholders in the ocean sector. Numeric data is provided to registered users through the web-GIS (Geographical Information System) of the INCOIS site. Users have the options to select the region of interest, time and the parameter. Forecast for a specified request. The forecast is also disseminated through village Information Centre’s, All India Radio, FM Radio, Digital Display Boards, NGO websites and TV channels in local languages.

2.4.4 Information Tool-Internet

The internet is a network of networks, linking computers to computers sharing the TCP/IP protocols. Each runs software to provide or “serve” information and or to access and view information. The internet is the transport vehicle for the information stored in files or documents on another. It can be compared to an international communications utility servicing computers. It is sometimes compared to a giant international plumbing system. The internet itself does not contain information. It is a slight misstatement to say a “document was found on the internet”. It would be more correct to say it was found
through or using the internet. What it was found in (or on) is one of the computers linked to the internet.

2.4.5 Fisheries College and Research Institute in Thoothukudi (Tamil Nadu Fisheries University)

Professional fisheries education in Tamil Nadu commenced with the establishment of the Department of Fisheries Science in 1975 under the Tamil Nadu Agricultural University TNAU (Tamil Nadu Agricultural University) inaugurating the department, the Minister of Fisheries observed that “this department will form the nucleus for a fisheries faculty of the TNAU that will commence to impact education in fisheries science in a college to be located at a suitable place in the state of Tamil Nadu. The college will turn out graduates, post graduated and doctorates in various disciplines of the Fisheries faculty form whom the manpower required by the state departments of Fisheries and Research Institutes as well as fisheries – based Industries of the country will be drawn” Accordingly, the Fisheries college was established at Thoothukudi in 1977 as a constuent college of the TNAU thanks to the admirable Efforts of the great visionary Dr. G. Rengasamy, the first and then Vice Chancellor of TNAU.

As envisaged by the Government, the college started offering the four year Bachelor of Fisheries Science (B.F.Sc) program in 1977, Master of Fisheries Science in 1989. It dedicated to impart professional fisheries education, undertake research in fisheries and to disseminate the developments to fisher folk, fish farmers, fish processors, fish entrepreneurs, and other researchers.

The fisheries university makes available personnel to assist the research and development & instructors to teach, administrators to plan, develop & execute fisheries
development plan, and create aquaculturist, farm manager, exporters, traders, breeders and modern fishermen.

2.4.6 All India Radio Program for Fisher folk

Radio is a very effective and strong media of mass communication because of its quickness, easy access and infinite reach. As per coastal village is developing village and many areas are without literacy.

Radio is an only source of information in several areas. It is playing a vital in dissemination information about national policies of government, providing entertainment to the listeners of different age groups, inform the listeners about the events taking place in the world and make them aware about the general information on health, education and many other things.

Village Knowledge Center (VKC) started a 15 minutes per week All India Radio program from Nagercoil FM station on March 10, 2012. The purpose of this program is to reach information to all fisher folk in the district. Likewise relevant information was provided to capacitate and take right decisions to improve the lives and livelihoods. Again the information and knowledge disseminated in the AIR program is based on the needs assessment and helpline queries received. The recorded messages are broadcasted by AIR on every Saturday from 6.45 pm to 7.00pm this time is preferred by fisher folk as they are free to hear after returning from fishing and attending to the household chores. On the contrary to mobile phone audio messages, the AIR program reaches to all fisher folk in the district (MSSRF, 2012).
2.4.7 Mobile phone: Phone in Program

Phone-in-programmes provides opportunity to the fisher folks to ask questions to experts to get solutions. Phone-in programme is conducted on a fortnightly basis. The date of the Phone-in- programme and the topic is announced 3 days consecutively before the program through audio messages and in the notice board in the VKSs. The questions of fisher folk are collected for 3 days continuously and on the day of the program the fisher folk is called to their mobile number where the expert provides solutions to the queries through interactions. The process is facilitated by the VRC where the expert is invited to interact. This system ensured answering to all the callers without fail.

The fisher folk who call the helpline number 9282442311 or 9282442312 will be answered with the information or put on to the expert thought call conference and by interaction gets guidance / solutions to their problems. The common queries of fisher folk in the helpline service is forecasting on potential fishing zone, wind speed and direction, rainfall intensity, VRC projected for fisher folk and government schemes. The helpline number has been made aware of through audio messages in the mobile phones. During emergency announcements of cyclone, heavy rain or Tsunami and helpline receives more than 300 calls from fisher folk. The calls are attended throughout the day and night

2.4.8 Global Positioning System (GPS)

The Global Positioning system (GPS) is a satellite-based Navigation system made up of a network of 24 satellites placed into orbit by the U.S Department conditions, anywhere in the world, 24 hours a day. There are no subscription fee or setup charges to use GPS (http://www.garmin.com/about gps)
2.4.9 Pattern of use of GPS and Sonar system among fishermen.

The use of communication technology has impact on different communities and groups and these communities were getting good benefit from it. For instance fishermen community use GPS in sea during fishing and identify their location easily. However GPS information was vital to make data and the optimal zones at a distance from shore that could access through larger boats. Furthermore, fishermen with smaller boats were able to benefit from this information as well (Mittal & Tripathi, 2009). Another study was conducted in Pulau Banggi Sabah Malaysia indicated that 15% of the respondents used GPS for identified locations between 10 to 20 km away during fishing being safe while only 8% use for location to their villages. However 33% of the respondents used GPS for reach at safe place and most of the fishermen used the sonar in sea for location of the fish (Teh, Teh, & Meitner, 2012).

FAO (2007) reported that use of ICT among fishermen is being a resource assessment, capture or culture to processing and commercialization. Fishermen could significantly raise output with access to information on refining fisheries inputs, weather, markets, new production techniques, and farming technologies. ICT tools such as sonar, GPS and Fisheries remote sensing informed exactly information such as site, quantity and kind of the tracked fish and save cost, time and energy of the fishermen. According to Srinath and Rajeev (1995) the center was established and fishermen were provided mobile phones and GPS systems for getting information about weather and able to choose appropriate point for fishing. By using this technology fishermen could easily obtain information regarding height of the wave’s, weather updates and market information about fish. The new innovations from
different technologies such as sonar system and GPS were found very helpful for the fishermen community in India. The use of GPS system and sonar have given better benefits to fishermen communities in Asian countries. Fishermen have increased their income as well as living standard. It was showed that through use of GPS system fishermen have saved their time in finding their location similarly use of sonar have increased their product. These technologies succeed in developing countries (Walsham, 2010).

The fishermen taken online information about weather and temperatures from reliable agencies and sell their fish in reasonable cost in coastal areas. The fishermen who could not have enough money for these technologies have also now access to up-to-date information on the best fishing grounds and have improved the revenue. Fishermen and other different communities in developing countries usually have no proper access of information and almost they depend on other people and ask about market, trade and fishing rates from other people. This leads to disparity of rule during negotiations and allow traders to extract the maximum economic surplus from the trade with very little wealth go to the fishermen (Afanuh, et al., 2008). The GPS and satellite system have provided the good facilities to fishermen for monitor fishing vessels and fishing activity in low cost (Diederen et al. 2004). However sonar was used for finding fish and GPS was also used for position and judgement. Fishermen nowadays frequently use and adopt widespread variety of technologies in remote areas this technology have positive impacts on their livelihood (Cespedes, 2011). (Journal of American Science 2014;10(10))
2.4.10 Trends In Listen And Watching Radio And Television Among Fishermen

According to Philip & Udoh, (2011) the study indicated that more than half of the fishermen have their own radio set and source of information. The average time of listening radio among fishermen were early morning and in evening and some of the fishermen listen radio about fishing related programmes it was showed that fishermen are interested to get information regarding fishing on radio. Furthermore showed that about 54% of the respondents were interested to listen fishing and agricultural related news on radio. However 56% of the respondents would want information by television and other source of information. The survey conducted by Basavakumar, et al. (2011) revealed that 69% of the fishermen listen radio programs regularly while 26% occasionally and only 5% of the fishermen were not interested to listen the radio. However it was revealed that 38% of the respondents listen fishing related program krishiranga 45% occasionally 17% of the respondent never listen this program. In another study conducted by Beegum (2006), in India, showed that 16% of the population of fishermen community listen radio, however 8% watch television programs. According to Ibeun and Mdaihli (1994) the study was conducted in Kainji area Nigeria about the utilization of the communication media which showed that 56% of the fishermen had their own radio and half of them listen radio at fishing area sites. While 11% fishermen listen radio about fishing related programs. According to the fishermen such kind of program have increased their knowledge and learnt something new. Furthermore, it was indicated that 45% of the fishermen listen radio in morning 22% in afternoon and other fishermen listen radio from 8.00pm to 10pm frequently. Furthermore study revealed that radio is the mostly used ICTs tools...
for Journal of American Science 2014;10(10) getting the informing and knowledge about fish farming. According to Srinath & Rajeev (1995) mostly fishermen obtained information about weather forecast by the radio and newspaper. The decision were made regarding fishing voyage was based on the weather report get at the time of departure. To facilitate fishermen regarding their access to ICT a village knowledge centre (VKC) was established in India. The study showed that in Bangladesh 23% of males and 21% of females have radio while 71% of males and 44% of females’ fishermen have regular listener of radio. The technologies of different choices among fishermen community in terms of reducing the gap between rich and poor was the mobile phones. The mobile phone demand is increasing day by day among fishermen in Bangladesh. Mobile Phones have provided good access to the fishermen to check rates in different markets for selling their fish. The mobile phones have made it easier for people to find work and shared information to villagers (Rashid, et al., 2010). The survey conducted in Uganda the result showed that 39% fishermen listen radio and get the information regarding fisheries development. While the most important to source of obtaining the information was television where 46% fishermen watch the television and get the information about weather and fishing business in their country. The further study indicated that 21% of the fishermen use the social media network to contact with their friends. However the newspapers books and magazine reading habit was very low among fishermen. It was clearly showed that only 12% fishermen read the newspaper books and magazines (Ikoja & Ocholla, 2003). Another study indicated that 63% of fishermen listen and watch the weather report including when they are on board by radio, television and internet. However, most of
the fishermen obtained weather updates from the National Oceanic and Atmospheric administration (OAA) National Weather Service and the USCG. Feedback on how to improve weather information and reporting mostly yielded responses about increasing the frequency of updates (Camp, & Suttotong, P. 2007).

2.4.11 Pattern and adoption of mobile phones among fishermen

Mobile phones for information were effective among fishermen which enhanced their income. In this context, mobile phones played vital role in increasing market efficiencies, it was indicated that before the mobile phones the fishermen were sold their fish at home market and near their working places without getting good price. Whereas using mobile phones, fishermen were able to find out good prices of fish in surrounding markets and were able to sell their fish with the highest price. Therefore it was showed that mobile phone improved the livelihood of fishermen and customers (Jensen, 2007).

The study was conducted in Nigeria the result revealed that 55% of the fishermen have their own mobile set. It proved that mostly fishermen have directly access to market. Furthermore it was indicated that 53% of the fishermen mostly use mobile phones to contact with suppliers while 48% of the fishermen contact directly with customers. However, 20% of fishermen used mobile phones for monitor prices. These findings indicated that by using communication technology fishermen income was better than the fishermen who do not use mobile phones as well as other communication devices (Ifejika, et al.,2009). Shepherd (2000) showed that use of mobile phone among fishermen and other fishing related communities in South India has dramatically reduced in the price of distribution and near perfect adherence to the law of
one price. Several studies conducted in some particular countries which showed that mobile or m-commerce facilitated cost reduction for farmers and fishermen, and offered them opportunities for deepening internal and external business relationships. However, wireless and mobile phone could play very important role for fishermen to communicate with their friends and related agencies to get information about weather in sea. These tools also provided pitch to fishermen to talk with agents and dealer for getting the good prices from market. Through the use of ICT fishermen can get related information from all over the world. ICT used in a wide range of applications in the fishing world. Boat Journal of American Science (2014) crews can cut deals on mobile phones for the day's catch while still at sea. Boat captains know their locations using GPS technology. Sonar helps find the big schools of fish, leading to more productive catches. Weather conditions are more accurately predicted and shared among boats, and large-scale resource assessments monitor scarcities (Boadi et al. 2008, Hayrol et al. 2012).

According to report of FAO (2007) fishermen use mobile phone for business, trade, exchange the information regarding market and for emergency purpose. The ICT could reduce the poverty of fishermen if this technology were used in fishing sector properly. Through ICT important information and knowledge could contribute among fishing communities in making decisions on a variety of matters from whether to involve in specific fishing operations for trading at a local market that could help to reduce their weakness and improve their chances. Many fishermen use mobile phone and other communication technologies for the purpose to know about market, weather, flood or tsunami. Such kind of technology not only have
saved the time of fishermen as well as increased their income. According to the report before mobile phones both purchaser and producer welfare increased waste 6% of the fish were unsold has been eliminated fishermen profits were up to 10% and consumer prices were down 3% directly driving a 20 rupees per month consumer surplus, the equivalent of a 3% increase in per-capita GDP from this one market alone. Furthermore the 32% of fishermen responded that the used of mobile phones to arrange purchase of inputs were further broken down by the types of inputs they used the mobile phone to purchase Premix fuel, hooks, bait, food, ice blocks and nets were also frequently purchased over the phone. However 20% of the fishermen have used mobile phones to develop access to new customers. This frequent interaction helps to constructs trust and confidence in their businesses. However, further it was showed that 22% of the fishermen used the phone specifically to access price information from the different markets sites and the indication a significant increase in the number of landing sites visited monthly after the advent of mobile phones. Such technology has brought good changes in fishermen life (Salia, et al., 2011).

According to Mudhai et al. (2009) the use of mobile phone enables fishermen to negotiate with market traders thus could get the good price of fish. Meanwhile, by short message service (SMS) fishermen contact their community and get the information about upcoming events and weather. The attitude of the fishermen community about culture and social activities were tested by measuring their level of interest to read the newspaper, listen the radio and watching the television programs. The use of mobile phone among fishermen community is beneficial similarly fishing extension officer also share different information and distribute learning content to the
mobile phones and share the audio files among fishermen by Bluetooth. Fishermen community use information communication technology tools in sea and contact with dealers and sell their product to enhance their income and same time rural communities and agricultural organizations could get good benefit to improve their life. Fishermen could improve communication between the non-Governmental organizations. Mobile phones played a very vital role in the development and efficiencies of fishermen. Many other studies showed that mobile phones reduced the distance among fishermen community.

2.4.12 ICT Application preferred among Fishermen

Mobile phone holds the application of modern information communication technologies (ICT) to spread the information and knowledge among fishermen and farmers specially fishermen prefer to use the mobile phone to connect with their friends, community and market for selling their product. Adogla (2009) revealed that fishermen prefer mobile phone because it is easy to connect with market and easily can get information about price. The applications of mobile phones through fishermen mostly more than 55% have their own mobiles phones. FAO (2007) stated that fishermen community use information communication technologies and fishermen community mostly prefer communication technologies such as sonar for tracing fish. Other Application such as GPS used for route and location findings. However, mobile phones for trading, and exchanging the information about weather danger and location among each other’s. Furthermore, radio programs for fishing communities, web based information and other related technologies can be introduced and adapted in remote areas. By using new communication technologies their lives can be improved.
Furthermore mobile phones can provide opportunities to fishermen and merchants to communicate with each other by calls short message services or can use Wireless Application Protocol (WAP) even fishermen can sell their product while at sea.

Roldan and Wong (2008) showed that internet and mobile applications can be used to help micro-enterprises to handle and apprehensions regarding the information and communication which could deliver locations for bringing micro-entrepreneurs and sellers and customers to meet their requirements online. In this circumstances there seems to be little awareness and interest among fishermen, and other small entrepreneurs in availing of internet services. The online and e-participation is also low and if ICT is introduced, programs which are able to increase financial and income will be welcomed by the islanders, the majority of them is fishermen. However, it was also indicated that fishermen does not use internet and other new communication technologies. Furthermore, few of the islanders have a personal computer having Internet access in their homes. Satellites system has made very easy way to communicate on any place in globe (Ernberg, 2007).

Several studies have been conducted for fishermen community with different purposes and goals. Joshi et al. (2010) Pather and Mitrovic, (2008) it was indicated through different experiences that modern fishermen require accurate and reliable information on weather and oceanographic. Communication either in the form of sharing of information or warning of any disaster is one of the important needs especially when they are into deep sea. Mobile phones are good source of communication. No fishermen had knowledge in rural fishing villages of southern Africa regarding use of the computer at the local library of ICD project the fishermen
community access computers in the library which provides information about fishing licenses. Use of this technology improved fishermen basic livelihoods in indirect ways. In this case it has been observed that ICT empowered the life of the fishermen community. The information Village Research Project was implemented in India the computer centre was established in fisher village where the fishermen connected to the internet regular and updated with weather reports of the Indian meteorological office. (www.kanayakumari.nic.in)

**Fishing harbour**

In the coastal region of Kanayakumari District there is only one fishing harbor at Chinnamuttom. Because of the construction of semi circular breakwater enclosure, fishing vessels could be berthed at the time of landing as wells as during rough sea. This harbours could accommodate 240 mechanised crafts and nearly 1000 country vessels, ie, Kuttumaram. Nearly 4,000 fishermen from neighboring coastal villages have registered and they are issued with identity cards to use the harbor.

The mechanized boats can catch 15,000 to 25,000kg of fish per day. But during non-seasonal months the catch per boat will be 700-8000 kg/day. It has been recorded that in seasonal landings in Kanyakumari fishing village nearly 81,000kg per month was obtained. Most of the mechanized boats used long lines with baited hooks and also trawler nets.

Comparatively, the Chinnamuttom harbor is safe with good facility for fish landings. There is a need for development of such harbours one on Colachel and another in Thengaipattinam. This will ease that crowding situation in other fishing
villages. Another advantage is easy transport to the marketing places before the catch perishes. (www.Kanyakumari.tn.nic.in)

2.4.13. ICTs in Fisheries

New information and communication technologies (ICTs) are being used across the fisheries sector, from resource assessment, capture or culture to processing and commercialization. Some are specialist applications such as sonar for locating fish. Others are general purpose applications such as Global Positioning System (GPS) used for navigation and location finding, mobile phones for trading, information exchange and emergencies, radio programming with fishing communities and web-based information and networking resources. (FAO.2007)

Introduction of mobile phones in India has brought about a tremendous change in fisheries sector. One result was a dramatic improvement in the efficiency and profitability of the fishing industry. As mobile phone service spread, it allowed fishermen to land their catches where there were wholesalers ready to purchase them.

Different communication technologies have been used by the fishermen, entrepreneurs, aqua culturist, extension workers, etc. Of all these, radio has been found to be most widely used by famers. Information on various innovations of fisheries technologies are being disseminated among the famers.

The Internet is emerging as tool with potential to contribute to rural development. Internet enables rural communities to receive information and assistance from other development organization: offer opportunities for two-way and horizontal communication and for opening up communication channels for rural communities and development organizations. Internet can also give a vast global information resource. The Internet has proven valuable for the development of Fisheries in developing countries like India.