INTRODUCTION
1.0. INTRODUCTION

The food security problem in India has been alarming due to the rapid growth of population and the reduction of the per capita land. The current scientific, economic, environment and social trends are forcing farmers and policy makers to look for alternatives to fulfill the nutritional requirement for the growing population. Fish with an average of 18-21 percent protein can be the best alternative in this context. Fisheries sector have been playing an important role in the national economy through improved food supply, employment and income. During 1998-99, fisheries sector contributed Rs.22, 223 crores to the total Gross Domestic product (GDP), forming 1.4% of the total. The seafood exported from India in terms of volume is 3.4 lakh tones and Rs.6, 200 crores in terms of value (Ayyappan and Biradar, 2001).

The exploitation of marine fishery at sustainable level is very essential in view of the sluggish growth of the sector in recent years. The cost effective and environment friendly fishing technology is to be worked out. Fish farming practices hold promise for many small farmers and potential significant benefits for strengthening the rural economy. How fast farmers adopt fish farming practice depends on economic opportunities and incentives. These incentives are influenced by available resources, technical information, market forces, environment society, research priorities and government policies. Not much research work has been done in respect of socioeconomics of fisherfolk in India. The discipline of fisheries economics - comprising both aquaculture and capture fisheries economics has much scope to play a catalytic role in fisheries development in the country. In this context it is highly essential to review the status of research in this field and to suggest possible areas in research and education in socioeconomics of fisherfolk (Kalawar, 1981; and Panikkar and Alagaraja., 1981).
Fishing has been a traditional occupation of a large section of the people who are residing at the seacoast all over the world. Until the turn of the last century, not much attention was paid to exploit the wealth from the sea. Human race has been depending largely on land resources for their welfare and survival. The land resources are rapidly getting depleted and it is believed that within the coming 25-30 years many raw materials that are at present obtained from land will be in short supply. Therefore, attention has been drawn towards the ocean which covers 71 per cent of the earth. The sea is not only a storehouse of water but also contains enormous resources such as food, energy, minerals, petroleum etc. The sea as a biological environment is the source of food and other valuable products to the people, with increasing population and with the progress of human society, the dependence of man on sea for food has been increasing steadily. Fishery is concerned with economic exploitation of aquatic productivity. It means the capture and processing of (sea, coastal and inland) aquatic animals and plants as an occupation for profit. Fishery includes not only the business of catching fish in the ordinary sense but also taking of shell fish and other resources of the sea and inland waters. The important fishing grounds are found within a few hundred miles of the coast. They lie partly on the shore-belt of shallow water which covers the continental shelf or the submerged platform surrounding the continents. Others are located in the elevated parts of the sea floor at some distance from the shore. Almost all the important fishing areas are confined to the temperate zone which may be due to the warmth of the tropical water which favours the growth of innumerable kinds of fish. The tropical regions of the Atlantic, Pacific and the Indian Ocean hold out great promise for fisheries. The fisheries sector in India has been recognized as a powerful generator of income and employment. India has emerged as the second harvester of Inland fish in the world with the inland fish production of 2.2 million tones and marine fish production of 2.7 million tones. India is the eight largest harvesters of fish in the world. The
annual average growth rate of the sector from 1984-1985 to 1995-1996 is 5.4 per cent. But during 2007, the annual average growth rate is 3.24 per cent (Qasim, 1989).

India with a long coastline of 8,129 k.m., 2 million Sq. k.m. of exclusive economic zone, and 1.2 million hectares of brackish water bodies, offers vast potential for development of fisheries. As against the estimated fishery potential of 3.9 million tones the country has been able to tap 2.6 million tons. Fishes are caught from every stretch of water in India. Before 1960, the markets for Indian marine products were largely shifted to neighboring countries like Srilanka, Myanmar and Singapore. This position continued as long-as dried items dominated exports from India. When the frozen and canned items increasingly figured in exports, the sophisticated affluent countries like U.S., France, Australia, Canada and Japan became important buyers. Japan is the top importer of marine products from India. Fishing is the traditional occupation of a community of fishermen living along the seacoast. Fishing and allied activities constitute an industry and have created employment opportunities for more and more people having different skills in different fields of fisheries. It offers a wide scope to fulfill the objective of production-cum-employment envisaged in the development plans in India. It provides direct employment to millions of people and indirect employment through associate works like net making, boat making, boat repairing, fish processing, fish trade, fish transportation etc. In this context the fisheries sector is given high priority since it has the potential of employment generation.

The marine fish and its products have very good export potential for earning considerable amount of foreign exchange for the nation. Fisheries sector occupies a very important place in the socio-economic development of the country. It has been recognized as a powerful income and employment generator as it stimulates growth of a number of subsidiary industries and is a source of cheap and nutritious food besides emerging as an important item of export trade. This sector is thus an important source of livelihood for a
large section of economically backward population of the country, particularly in the coastal areas.

The state of Tamil Nadu has a coastal length of 1076 k.m. which constitutes 15 per cent of India’s coastal line. There are 591 fishing villages in 13 coastal districts of Tamil Nadu starting from Tiruvallur district to Kanyakumari district. The fishermen living in these coastal fishing villages are 6.79 lakh, which includes 3.58 lakh fishermen and 3.40 lakh fisherwomen during 2007-2008. The literacy rate is 66 per cent. About 2.70 lakh marine fishermen are actively engaged in fishing. The marine fishermen are taking out livelihood by fishing in the continental shelf of 41,412 Sq. Km. engaging 8,500 mechanized fishing crafts and 41,000 traditional crafts. About 3.70 lakh metric tones of fish are caught in Coramandal Coast, Palk Bay, and Gulf of Mannar Coast throughout the year. Research related to fisheries economics mainly covered marine capture fisheries. Most of the research works were carried out on different areas on specific problems relating to economics of different fishing methods, impact of mechanization, marketing problems, etc. Some micro level studies on the costs and earnings of different craft-gear combinations indicated that the introduction of mechanized fishing boats such as trawlers, gill netters and purseiniers along the Indian coast have shown positive economic impact (Sathiadhas, 1997). Investigations related to these aspects are skeptical and pointed out various conservation problems and negative effects of mechanization on traditional sector. Lot of work has been carried out in socio-economic aspects of marine fisheries.

Socio-economics have been brought into existence by the demands of the planners attempting to combine coverage of the social sphere into one role within the project or planning team. Several micro and micro-level socio-economic surveys had been conducted by various agencies and research workers in different regions of our country to study the socio-economic problems of the fishermen community (Desai and Baichawal, 1960, Selvaraj, 1975, Panikkar, 1980, Sathidhas and Panikkar, 1988 and Korakandy...
Ramakrishnana, 1994). These researches over all covered the aspects like characteristic features of the target groups of species developmental programmes, impact of introduction of new technologies and practices on income and employment, economic impact of detonative fishing and mariculture practices, economic growth of particular region in comparison to national development. Research conducted at various part of the country attempted to cover costs and earnings of fishing practices of marine sector, economics of the operation of various crafts and their feasibility of operation. Varghese (1996) evaluated the economics of industrial fishing vessels and worked out trends and cycles in fishery returns from motorised and traditional crafts. Extent of swing in the annual revenue was also observed. Technoeconomic assessment of marine fish production carried out by Devraj and Vivekanandan, 1998 assessed the economic performances of trawlers and motorised gill netters and analyzed the distribution pattern of marine fish on the terminal market.

Socio-economic study of small-scale marine fishermen was carried out where emphasis was given on costs and earnings of traditional fishing units (Sathiadhas and Panikkar, 1988). Rajan, 1990 studied socio-economic conflicts and their resolution in the state of Kerala. With regard to marine fish marketing a few studies have been conducted in the national and regional levels (Saxena, 1983, Rao et al., 1983, Sathiadhas and Panikkar, 1988). Studies related to the economics of fish retailing in Orissa highlighted issues related to marketing cost, market margin, seasonability of sale of fish and factors responsible for the success of fish trade in urban and rural areas (Mallick and Samuel, 1993). Studies have also been carried out to analyze the marketing share of fisherman and middlemen in consumer price (Sathiadhas and Panikkar, 1992).

Srivastava (1992) identified different market intermediaries and fishermen farmers share in the consumer’s rupee. Remunerative price for the producer and reasonable price for the consumer can be assured only by strengthening the fish marketing structure. Marketing
practices in different parts of the world, various impediments that are affecting the fish trade throughout South and Southeast Asia were studied by Rao (1991).

Datta et al., (1989) carried out input output relationship in capture fishery and worked out relationship between capital intensity and labour productivity and capital intensity and production. The Cobb-Douglas production function was used to find out the functional relationship of input and output for selected types of craft-gear combinations (Panikkar and Srinath, 1991).

Fisheries economics research related to inland fishery is very meager. Some of the studies covered riverine fisheries with regard to income of fishermen and fishermen's share in consumer's rupee. Social status and socio-economic problems of fishermen living along the Ganga and the Yamuna river at Allahabad were studied by Singh et al. 1995. Paul (1997) reviewed infrastructural base and policy support for inland fisheries. Lack of pre-harvest and post harvest infrastructural support in terms of efficient marketing mechanism, institutional funding arrangement and prevalence of revenue biased exploitation policies are prevalent in this sector. Some important aspects of riverine fishery, conservation and fishery management, income generation and productivity, input supply and remunerative prices to fishermen needs immediate infrastructure and policy support measures. Few studies have been conducted on aquaculture economics.

Studies related to cost of production, cost of operation, various cost factors and profit composite in fish culture were carried out by several researchers (Sinha, 1976, Rao, 1996, Singh et al, 1995, Rao and Raju, 1998 etc.). Ghosh (1990) studied investment pattern in organized system of coastal fish culture system with distinct brackishwater and freshwater aquaculture phases. Sathiadhas et al. (1996) worked out economic evaluation of composite culture practices of crab fattening and fish-shrimp farming in Kerala. Some studies on costs and earnings of integrated fish farming were carried out in different parts of the country (Ghosh, 1979)
Palk Bay is a shallow and flat basin, nowhere exceeding 15 meters depth. On an average the depth hardly exceeds 9 meters. The whole Palk Bay area is under the spell of both southwest and northeast monsoons. However, the southwest monsoon contributes only very little towards the annual rainfall of this area. Rainfall is moderate to heavy during October to mid-December with occasional gales. The mean annual rainfall varies from 762 mm to 1,270 mm. The monthly average atmospheric temperature varies from 25°C to 31°C with the maximum and minimum occurring in May and January respectively.

Palk Bay and Gulf of Mannar are interconnected with each other not only physically but also oceanographically by way of flow of currents especially under the influence of the northeast and southwest monsoons. Therefore a vast majority of the organisms found in the Gulf of Mannar are also seen in the Palk Bay particularly those free living/moving/floating animals/plants. However, the Palk Bay lacks the habitats such as the islands found in the Gulf of Mannar which support a wide variety of corals. Otherwise, Palk Bay is as resourceful and productive as the Gulf of Mannar. Palk Bay environment is unique in the sense that it is almost an enclosed bay with input from several small rivers along its coast from Point Calimere (Kodikkarai near Vedaranyam) in the north to Mandapam in the south. The branches of the Grand River Cauvery which drain through the districts of Thanjavur, Thiruvarur and Nagapattinam form a large backwater system between Muthupet and Point Calimere. The marshlands of this backwater system support lush growth of Mangrove forests which harbour a wide variety of birds both native and seasonally migratory. The backwaters act as breeding and feeding grounds for a wide variety of fin-fish and shell-fish. The enclosed nature of the bay provides protected waters that dolphins, porpoises and turtles frequent the region. Although the scientific literature available on the Palk Bay are relatively limited compared to that of the Gulf of Mannar, existing information also suggests the presence of endangered dugongs (Kumaraguru et al., 2008).
The coastline in Tamil Nadu can be broadly divided into three fishing zones. They are (1) Pulicat Lake to Point Calimere that lies in the Coromandal coast; (2) Point Calimere to Dhanushkodi that covers the Palk Bay and the Palk Strait; and (3) Dhanushkodi to Kanyakumari which covers the Gulf of Mannar. Fishing in Palk Bay is based on multi-gear, multi-species and is carried out throughout the coast of mainland and the northern side of Pamban/ Rameswaram Island. There are 87 fish landing centers located along the Palk Bay coast south of point calimere. Fishing is done in the Bay throughout the day. Fishermen of Mandapam and Pamban Island may stay put for fishing lasting even for five to seven days at a stretch. Catamarans, dug-out canoes, plank built Tuticorin type Thoni or vallam, and stretched masula boats are the traditional crafts in use. The bottom conditions in Palk Bay are favorable for bottom trawling and hence good catches are obtained.

Majority of the fishermen belong to an economically weaker section and follow traditional methods of fishing employing indigenous crafts and gears. Various Government schemes for providing housing facilities, dispensaries and community amenities and approach roads were given priority (Kamal Kumar Data, et al., 1989, Islam, 1993, Hussain, 1994; Seenivasan and Ramadas, 2014, and Mohamed Rabeek Raja and Ramadas, 2014a, b, & c). Organized attempts were made to promote fishery co-operatives in our country (Kumaraguru, et al., 1998). Thus, the past studies have indicated that, the fishing workers carried out a multiple role as regards the development of the marine fisheries and the coastal economy. There are no much studies on the socio-economic status of the fishermen population in the fishing villages of Thiruvadanai Taluk of Palk Bay waters hence the present investigation has been carried out which will through more light on the same.

STATEMENT OF THE PROBLEM

Fishing workers, particularly in the fishing communities are the most disadvantaged group. They have a very low status in the society. There are about 6.79 lakhs fishermen in Tamil Nadu. Of which 2.70 lakh are productively employed in fishing and its related
activities. Fishing workers are actively involved in the economic activities such as making and mending of nets, fish processing, dry fish preparation, marketing of fresh fish, dry fish and fish handling such as sorting, weighing, gutting, icing, etc. Their contribution to the development of small-scale fisheries is not recognised and compensated properly due to the social and cultural discrimination against them. They have acquired a secondary status in social life, economic activities and decision-making. A number of socio-economic constraints limit their work productivity and role in employment and income generating activities. They have the potential to play an active and sometimes dominant role in fishing related activities. In India, not much research work has been done in the field of fisheries economics. The thrust of fisheries research in India so far has been centered on biological and technological aspects, mainly the exploitation of fishery resources. A social and economic aspect of marine fisheries research has been completely ignored. Recently there have been some contributions through micro level studies which specifically relating to economics of fishing methods, impact of mechanization of craft and gear making, etc. Ramanathapuram district is one of the important maritime districts of Tamil Nadu, the fishing workers are busily engaged in all the sea shore-based activities like sorting, weighing, salting, drying, marketing, etc. However, their economic activities go unnoticed. There is no scientific and extensive study on the socio-economic activities of fishing workers. Hence, a research is required inevitably to weed out the exploitation of the weaker section with total illiteracy living along the coastal line. It will throw light on their real contribution for economic development. This will also pave the way for providing proper compensation for their activities through suitable policy measures. The present research aims at studying the Labour Conditions of Marine Fishing Workers in Thiruvadanai Taluk, Ramanathapuram District.
SCOPE OF THE STUDY

In about 26% of Tamil Nadu coast lies in Ramanadhapuram district consisting of 180 Marine fishing villages (Anon, 2010). Total marine fisher folk population forms about 1% of state’s total population. These fisher folks are responsible for a vital part of the state’s economy by bringing a huge foreign exchange. Nevertheless, the significant role played by this sector, the majority of fishermen belongs to economically backward group of the society. Mechanization of fishing craft and introduction of nylon nets coupled with higher external demand for marine products resulted in speedy development of marine fisheries sector. (Chong et al., 1991). Most of them are using traditional methods of fishing. Their economic condition is below poverty line with inadequate water supply, lack of medical and health care etc., leading to low productivity improper marketing system and lack of additional vocations (Nuruzzaman, 1990). As there is lack of information about fishermen communities of the Palk Bay coastal region (Narayanankumar et al., 2000), it was proposed to study about the fishery resources and socio-economics of traditional fishermen community in about ten fishing villages chosen from Thiruvadanai Taluk, Ramanathapuram District.

In the present study the labour conditions of marine fishing workers in some selected village of Thiruvadanai Taluk, Ramanathapuram District were analysed. The study is confined to the socio-economic status of fishing workers. It is based on their role estimated using the data collected during 2012-2013 and 2013 - 2014. The sphere of this research work is also extended to the analysis of economic appraisal of fishing workers. This research also attempts for estimating their income, expenditure and savings of fishing workers. Finally, the study also tries to offer constructive suggestions for evolving a firm and suitable policy for improving the conditions of fishing workers in India.
OBJECTIVES OF THE STUDY:

- To assess the variety, quantity and commercial value of total fishery resources available in the coast.

- To evaluate the crafts and gears used in the study area to assess the extent of capital investment on means of production, level of indebtedness and credit utilization pattern

- To find out the socio-economic characteristics of traditional fishermen living in the selected fishery villages of Thiruvadanai Taluk, Ramanthapuram District

- To evaluate the gross income and expenditure pattern of villagers so as to arrive the per capita income which is an important measure of their standard of living.

- Analysis of Marketing methods adopted by the fishermen population and to study about the utilization of Government schemes formulated for their welfare

- To find out the problems of fishing and to offer suitable policy suggestions to strengthen the livelihood of marine fishing workers in the study area