nine houses sanctioned for Marthandamthurai were reallocated to the fishermen at Midalam instead of Marthandamthurai.\textsuperscript{219}

In 1960-61 the government sanctioned construction of eighteen houses in Kanyakumari district. Ten houses are sanctioned Kovalam Fishermen Co-operative Society and eight houses are sanctioned in Muttom Fishermen Co-operative Society in Kanyakumari district.\textsuperscript{220}

The fishermen of Tamil Nadu had faced acute housing problem mainly due to poverty and sea-erosion. The Government of Tamil Nadu was kind enough to extend housing schemes to fishermen, but unable to satisfy all the fishermen for wants of funds. The government attempted to solve this problem, but not upto the expectation.

\textbf{CHAPTER II}

\textbf{BLUE REVOLUTION}

The introduction of science and technology in fisheries made revolutionary changes in the fishing industries which paved the way for the Blue Revolution.\textsuperscript{221} The profession of fishing originated from the very beginning of the existence of human beings. It is one of the earliest factors of economic growth along with the hunting and pastoral stages of economic activities. Due to the growth of science and technology which led to the development of fishing had a tremendous development in the twentieth

\begin{footnotesize}
\textsuperscript{219} G.O.Ms.No.1740, Food & Agriculture Department, dated 12\textsuperscript{th} May, 1961, TNA.
\textsuperscript{220} G.O.Ms.No.2404, Food & Agriculture Department, dated 1\textsuperscript{st} July, 1961, TNA.
\textsuperscript{221} Tamil Nadu State Administrative Report, 1988-89, Tamil Nadu, 1990, p.46.
\end{footnotesize}
century. The art of fishing had a phenomenal growth and change from the mode of agricultural activities.\textsuperscript{222} The fishing industry was an important source of income not only to the government but also to public who had got well advanced in the nature of fishing but fisheries department. There was much expected phenomenal growth.\textsuperscript{223}

Fishing in Madras Presidency was in the hands of backward people who unfortunately were backward economically and it had become essential to improve their living conditions in every respect. The Fisheries Department of Tamil Nadu is one of the oldest one in the country, the main administrative organisation responsible for developing the marine and inland fish potential of Tamil Nadu. The Madras Fisheries Department is the best organised in India with variety of activities aimed at developing the industry.

The aims and objectives of the fisheries department are., (i) improving fishing and allied industries, (ii)increasing the production of fish new methods and improved crafts and gear, (iii) translating the results of scientific investigations into actual practice, (iv) studying the commercial methods and practices and improving the material and moral conditions of the fisher-folk engaged in the industry, (iv)to uplift the socio-economic conditions of the fisher-folk and to strengthen co-operative societies,\textsuperscript{224}

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  \item \textsuperscript{223} Francis Day, \textit{Report on the Fresh Water and Fisheries in India and Burma}, \textit{Government of India}, Calcutta, 1873, p.216.
  \item \textsuperscript{224} \textit{Ibid.}, p.216.
\end{itemize}
\end{footnotesize}
(vi) to make available at cheaper rate the protein rich high food to the public.²²⁵

In 1840, detailed information dealing with the condition of fisheries is not available. However, from the letters of Collectors, to the Board of Revenue in 1841, it is evident that a rich fish trade was in existence in all the districts for a long time. The dealers used to purchase salt-cured fish from the fishermen and export, the same to distant cities.²²⁶ The English East India Company used to collect tax on the craft and tackle used by the fishermen both in sea water and canals. Duty was also imposed on the salt purchased by the fishermen for curing fish. As fish was an article of daily consumption, a duty on it proved to be a good source of income for them.²²⁷ During this period the British Government was mainly interested in the collection of revenue from the fishermen and did not show any interest towards fisheries development. Due to the high cost salt the native fishermen used to show little interest any interest in fishing and spent most of their time as carriers in the maritime trade and other avocations. Thus the fisheries were in a depressed state.²²⁸ During this time, under the direction of Her Majesty’s Secretary of State for India in 1867, Dr. Francis Day of Madras Medical Service, subsequently Inspector General of Fisheries in India, visited the ‘anicut’ or ‘weirs’ in the southern and nor the districts of

²²⁶ Letters of Collectors of Vizagapattinam dated 15th April, 1841 and Guntur, dated 15th April, 1841 to the Board of Revenue, Madras State.
²²⁷ Letters of Collectors of Rajamundry, 8th February, 1943 and Vellore, 8th April, 1847 to the Board of Revenue, Madras State.
Even before 1870, H.S. Thomas, a Madras civilian and Dr. Day of the Madras Medical Service had urged the importance of developing the fishery resources of India as an important source of good supply. In his subsequent efforts for the development of fisheries in the whole of India, he advocated duty-free salt for curing sea fish within fenced enclosures. Dr. Francis Day’s suggestions were accepted by the Madras Government, and from 1882, an increasing number of yards, or bonded enclosures, were opened in many places.

In the beginning of the 20th century an attempt was made to provide a base on which the present planned fisheries developed due to the efforts of Sir. F.A.Nicholson, who in an official note of 1899 on the desirability of developing the Agricultural Department proposed that a Bureau of Fisheries should be established as an important branch of that department. In January 1905, he submitted general proposals for the development of the fisheries of the state and in May 1905 the government deputed him for a period of two years to investigate the fishery industry in the state and also to study to fishing methods and practice in Europe, Japan and America.

On 28th February 1907, Sir F.A. Nicholson proposed, (i) the establishment of experimental sea fisheries station at Tellichery on West

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Coast, (ii) the acquisition of ponds in Madras for cap culture by his assistant, Mr. V.V.Ramanan; and (iii) the deputation of three students to Japan for training in catching, curing and piscine culture, to provide the export staff required at the sea fisheries station and at the carp hatchery.

In April 1907, the government accepted Sir. F.A.Nicholson’s proposals for the initiation of the small Bureau of Fisheries for Madras. The Bureau of Fisheries constituted for the following reason; (i) every civilised country possessed a fishery department; (ii) the fishing industry is of third importance in the country; (iii) the primitive and inefficient condition of the fishing industry in Madras without capital initiative or knowledge rendered special attention of government, all the more necessary and sanctioned the following permanent staff, like one honorary Director, one Assistant, two sub-Assistants one clerk and typist, three clerks and four peons.\(^{233}\) The government approved his proposals in 1907, and sanctioned two stations at Tellichery and the carp culture and an experiment centre at Madras.\(^{234}\)

As Director, Sir. F.A. Nicholson found that two European Assistants, one for marine and another for inland fresh water were needed. They must be fishery experts who dealt with the supervised the details of work conducted the necessary enquiries translated into definite methods and experiments the policy and lines of action sanctioned by the Director. European experts were, therefore selected. They were H.C.Wilson for Inland fisheries and James Hornell in marine fisheries appointed in 1907 and

\(^{233}\) Report of the Committee on Fisheries in Madras, 1929, Government of Madras, 1929, p.4.

\(^{234}\) Ibid, p. 4.
1908 respectively. In his report embodying the results of his enquiries on the west coast, he laid emphasis on the restricted exploitation of the sea, the inefficiency of the boats and nets, the difficulty of landing catches in a sound and untainted condition and the treatment of fish when landed after the submission of his report he visited Japan, the United States and England in 1906 and he made another extensive tour in America and Europe in 1907 and formulated some proposals to develop fisheries. In his reports he brought so many information on the economic and industrial sides of the industry, prevalent fishing and curing methods, apparatus, customs, the relation of labour to capital the fish curing yards, the progress of fishery work and the development especially by government institutions in Japan and the west. On return from his tour he recommended experiments in culture in fish forms and hatcheries and stocking of banks canals ponds and even paddy fields and wells fry bred in hatcheries and ponds and suitable centres.

In April, 1907, the government accepted F.A.Nicholson’s proposals for the initiations of the small Bureau of Fisheries for Madras. Hence, Government of Madras constituted a committee to consider the aims of the fisheries department, to review the progress so far made and to make recommendations for its future. The committee consisted of Rao Bahadur, Sri K.Venkata Reddy Naidu, Kt. as Chairman and Diwan Bahadur

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237 G.O.Ms.No.1342, Development Department, dated 5th August, 1929, TNA.
238 G.O.Ms.No.733, Revenue Department, dated 7th April 1907, TNA.
The Fisheries Department was surprised by a Director of Fisheries who was assisted by three Assistant Directors and a small technical subordinate staff. The work of the department mainly consisted of the improvement of the food supply of the people by developing both the marine and fresh water fisheries of the country. The introduction of new fishery industries and development of old one and the improvement of the material and moral condition of the fishery community by moral condition of the fishery community by introduction better methods improved the gear by demonstrating to them the value of thrift-co-operation, education and temperance.

F.A.Nicholson planned to introduce western system of fishing technique in Madras by employing European experts. The government to establish an experimental sea fisheries station at Tellichery on the west coast, Research and Experimental stations were established in different parts of the presidency such as Ennore, Pulicat, Cannanore, Tanur and so on. Researchers were carried out into technological biological, hydrographical and other scientific aspects. Machine boats were also introduced for fishing in the deep seas. The new model of nets were introduced during the first

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239 G.O.Ms.No.1342, Development Department, dated 5th August, 1929, TNA.
half of the 20th century to enhance fishing to special attention was given to pearl fishing. Regarding the inland fisheries the Government of Madras adopted certain measures to develop the fishing in tanks, lakes and dams. So the Government also provide the transporting and marketing facilities of fish in the nook and corner of the State and other parts of India.  

The marine fish production level in Tamil Nadu is third, and inland fish production in second and first in the total fish production in the country.

The Frederick Nicholson, who had handed over charge of the department to Hornell on 26th November 1981, continued in charge of the west coast fisheries stations until the 1st February 1920. On 1st February 1920 he handed over charge of the west coast to Govindan.

Andhra State was formed on 1st October 1953 and the services of Anantharaman, Director of Fisheries was allotted to Andhra State with effect from 16th November 1953 and V.John was put in addition charge of the post of the Director of Fisheries from 16th September, 1953 to 18th October, 1953. But the post of the Director of Fisheries was abolished in 19th October 1953.

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244 G.O.Ms.No.2832, Public Department, dated 13th October, 1953, TNA.
In connection with the partition of Andhra, the partition committee also recommended that after the separation of Andhra the Fisheries Department in the Madras State should be amalgamated with the industries department and was the control of Director of Industries and Commerce as there was no justification for a separate fisheries department with a full time Director. The government accepted the recommendations of the committee in 1953 and issued orders for abolishing the post of Director of Fisheries and placed the Fisheries Department under the Director of Industries and Commerce.\footnote{245} The Department in the Madras State was amalgamated with the Department of Industries and Commerce and controlled with effect from 7\textsuperscript{th} November 1953.\footnote{246} E.P. Royappa took charge as Director of the three combined departments from the same date and continued as such till the end of the year.

V. John and D. D. Peter Devadas continued as Deputy Directors of fisheries (south) and (north) respectively during the year 1953.\footnote{247} According to the recommendation of the partition committee, the Inspector of Fisheries at Chittor who was under Assistant Director was brought under the jurisdiction of Assistant Director, Anantapur after the promotion of the Andhra State.

The Rayadrug taluk which was added to the Anantapur district and was brought under the jurisdiction of Assistant Fisheries Demonstrator, Anantapur. Likewise the two other taluks of Adoni and Alur which were

\footnote{245} G.O.Ms.No.3188, Labour and Co-operation Department, dated 14\textsuperscript{th} September, 1955, TNA.
\footnote{246} G.O.Ms.No.4636, Development Department, dated 19\textsuperscript{th} October, 1953, TNA.
\footnote{247} G.O.Ms.No.626, Agriculture Department, dated 4\textsuperscript{th} March, 1955, TNA.
added Kurnool district were brought under the jurisdiction of Inspector of Fisheries Kurnool.

As regards the seven taluks of Bellary, they were transferred to the Mysore State. The inspector of fisheries stationed at Bellary. Research Assistant at Hospet and their menial staff were transferred to the Mysore Government was addressed on the administrative set up the post of the Director of Fisheries and the personal assistant to the Director of Fisheries were abolished. The existing posts of the special officer craft and tackle and the special officer functions of both the posts brought under a single officer in the cadre of Assistant Director of Fisheries.

On 30th September 1953, Fishing equipment such as fishing nets to the value of about Rs.15,000/- to Rs.20,000/- were distributed at different places all over the composite State of Madras. The government directed that these equipments would remain where they were and become the property of the respective state after the partition.  

The fisheries department started in 1907, continued as a separate department till 1940 under a Directory of Fisheries who was the technical officer. In 1939 World War II broke out. At that time India was under the control of the British Empire. In the meantime India meet the financial problems. In this circumstances in 1940 the Fisheries department under the control of the Director of Industries and Commerce. The post of Director of Fisheries was abolished. Till 1949 Fisheries Department under the control of Director of Industries and Commerce. In March 1919 in accordance with

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248 G.O.Ms.No.4636, Development Department, dated 18th October, 1953, TNA.
the recommendations of the retrenchment and reorganisation committees the Fisheries Department was again separated from the Industries and Commerce.\textsuperscript{249}

With the formation of the Andhra State, the Research Station at Dowleshwaram and Hospet, were transferred to the Andhra and Mysore States respectively on 30\textsuperscript{th} September 1953. The head-quarters of the Research Assistant (Algology) was shifted to Bhavanisagar with effect from 15\textsuperscript{th} November, 1953.\textsuperscript{250} In April 1955, in order to relieve the Director of Industries and Commerce and to enable him to devote greater attention to the industries and controlled commodities were placed in the charge of a non-technical Joint Director of Industries and Commerce who was an IAS officer. Subsequently the post of the non technical Joint Director was designated as Additional Director of Industries and Commerce.\textsuperscript{251} The fisheries branch was thus placed more or less solely in the charge of the Additional Director of Industries and Commerce and permitted to correspond directly with the government on matters relating to fisheries.\textsuperscript{252} In October 1956, the question of forming a separate department for fisheries with a qualified technical officer as its head was re-examined with reference to the suggestions at the All India Fisheries Conference held at Madras in September 1956, that the Fisheries Department could be separated from

\textsuperscript{249} G.O.Ms.No.1094, Food and Agriculture Department, dated 19\textsuperscript{th} March, 1958, TNA.

\textsuperscript{250} G.O.Ms.626, Agriculture Department, dated 4\textsuperscript{th} March, 1955, TNA.

\textsuperscript{251} G.O.Ms.No.1094, Food and Agriculture Department, dated 19\textsuperscript{th} March, 1958, TNA.

\textsuperscript{252} G.O.Ms.No.3188, Industries, Labour and Co-operation Department, dated 14\textsuperscript{th} September, 1955, TNA.
Industries and that an experienced and qualified technical officer could be separated from industries head of the fisheries department. The then Additional Director agreed with the suggestion that it was necessary to constitute the Fisheries Branch of the Industries and Department as a separate department if the general activities of the Fisheries Branch should be carried out with full vigour and undivided attention. As regards the suggestion that the Head of the Department should be a technical officer, the then Additional Director of Industries and Commerce stated that here was lack of technical officers good administrative capacity in the department and that after some more experience and training as a separate department the technical officers in the department were in a position to successfully handle the department. The State Fisheries Minister’s conference convened by the Government of India, Ministry of Food and Agriculture at Bombay on the 8th and 9th November 1957, recommended that the states should have separate fisheries department which could be headed by fisheries officers.

Hence, the government have carefully considered the suggestions and passed the following orders: (i) the Fisheries Branch of the Department of Industries and Commerce be separated from the Industries and Commerce Department and constituted into a separate department called the Fisheries Department, (ii) the controlled commodities work and all other works not connected with fisheries at that time looked after by the Additional Director of Industries and Commerce should be handed back to the Director of Industries and Commerce who should be given such additional assistance as may be necessary to handle this work, (iii) the existing arrangement of having an Administrative Officer as the head of the department continued for some time and the question of having an Administrative Officer of a Fisheries Officer as Head of the Department, Director of Fisheries was
given more responsibilities on the administrative side also. So that they became suitable for being considered for the position of Head of the Department from 1st April, 1958, the Director of Fisheries had complete control over the Fisheries Department staff including the ministerial staff in his office.\textsuperscript{253}

The most notable event during the year was the States Re-organisation as a result of which the west coast was merged with the Kerala State and Kanyakumari became part of Madras State.\textsuperscript{254} Kanyakumari district forms part of the ancient kingdom of Venad that existed after the sangam era which subsequently came to be known as Travancore.\textsuperscript{255} The Re-organisation and development of the rich fisheries off Kanyakumari demanded the urgent attention of the department. A State Fisheries Advisory Board was also set up to advise the Department on Fisheries development and welfare measures for fishermen. The Board at its first meeting held in August 1957 had made several useful recommendations.\textsuperscript{256}

On December 5, 1968, the Parliament had set its seal of approval on the Bill of rename Madras State as Tamil Nadu. The Rajya Sabha unanimously passed the Madras State (Alternation of name) Bill after an

\textsuperscript{253} G.O.Ms.No.1094, Food and Agriculture Department, dated 19th March, 1958, TNA.
\textsuperscript{254} G.O.Ms.No.790, Food and Agriculture Department, dated 28th February, 1958, TNA.
\textsuperscript{255} Madras Information, August 1957, p.15.
extended two-hour-debate. The bill had already been unanimously passed by the Lok Sabha in November 1968.

It can be said that the demand to rename the State of Madras as Tamil Nadu has its origins in the linguistic reorganisation of the state after independence. In 14th January 1969, Tamil Nadu State came into existence.\textsuperscript{257} The coast is dotted with decayed relics of early European activity in which retains its importance as the chief commercial and administrative centre of the state. It is linked with the major ports and important cities through road, rail, oceanic and air routes.\textsuperscript{258}

The State Government is entrusted with the responsibility of allocation of funds among different in co-ordination with the Central Government. At the State Government level a minister was in-charge of forest and fisheries. The minister was assisted by a Secretary, Deputy Secretary and Under Secretary. The Directorate of Fisheries is responsible for the implementation of State plan or schemes, it is headed by the Director of Fisheries. In the meantime the Director of Fisheries, is the member of the Indian Administrative Service. He is assisted by a Joint Director on technical matters. Senior personnel in the Directorate of Fisheries include Deputy Directors Zonal or Regional Officers, Assistant Directors or Superintendents of Fisheries, District Fishery Officers with wardens who are in-charge of each of the districts or a particular programme. Under these District Officers, Inspectors of Fisheries and other field officers function. It

\textsuperscript{257} Madras Information, Vol.XXIII, No.12, December, 1968, p.3.  
\textsuperscript{258} Ibid p.3.\textsuperscript{.}
is the administration and organisation procedures of Fisheries Department in Tamil Nadu.

The state is divided into four regions for the convenience of the fisheries administration, they are Madras, Tuticorin, Nagapatnam and Coimbatore. The Deputy Director of the Fisheries Department, who is in-charge of each region. The Directorate of Fisheries is divided into three segments, two are technical segments dealing with research, extension and deep sea fishing, and one is an administrative segment. The research and extension section is involved in training, information and statistics, co-operative and inland fisheries research, while the administrative wing is responsibility of planning legislation and accounting activities. So each and every components of different segments are under the control of Deputy Directors or Assistant Director.259

The Directorate of Fisheries is involved in various developmental activities like implementation of plan schemes research and training socio-economic evaluation of fishermen.260

The Government of India had entered into an agreement with the American Government for the expansion and modernisation of marine fisheries, with American aid. The objective of this project was to bring about on increase in the quantity of marine fishery products available to consumers by improving the existing craft and testing of different model of craft and table suitable to India, training of fishermen in modern methods of

fishing improved methods of fishing preservation and exploring the new fishery ground. Under this agreement the Government of India particularly Tamil Nadu Government have started a training centre at Tuticorin a train fishermen in power-fishing. Training for six months for a batch of 20 fishermen was given at a time. The trainees were given a stipend of Rs.50 per mensem.\textsuperscript{261} The government also established two training centres at Nagapattinam and Madras.

In this Indo-American Agreement include many schemes like, fish hooks, trawling wire, long-line hauler, lampara seine nets, cotton long lines, nylon twine, trawl nets, nylon nets, multipurpose winchers, long line winches a large stock of improved tackle and other fishing accessories. They are distributed to fishermen at subsidy prices.

Under the agreement entered into by the Government of India with the Food and Agriculture Organisation (FAO), Madras State received the technical assistance of six F.A.O. experts viz., two naval architects, one fishery engineer, two harbour specialists and one marketing specialists. A duty of naval architect to advice on the boat design and construction of various types of boats suitable to the local condition. The work of fishery engineer gave an advice on the improvement and mechanisation of existing indigenous crafts and gear and development of new types of local crafts and the introduction of crafts and the introduction of crafts and gears of foreign design. The surf boat and the pablo-type boat constructed by them are very popular among the fishermen.

\textsuperscript{261} G.O.Ms.No.1430, Food and Agriculture Department, dated 15\textsuperscript{th} April 1958, TNA.
With the expansion of off-shore and mechanised fishing programmers, it is necessary to improve harbour facilities for fishing vessels. The harbour specialist conducted a detailed survey of the various river-mouths in the state and they had Nagapattinam.\textsuperscript{262} The Madras harbour was established in 1877-81. In 1875 the foundation stone was laid by H.R.H. the prince of Wales (the later king Edward VII)\textsuperscript{263} Colachel is one of the village of Kanyakumari district. It is also a municipality. In Colachel one of the ancient and oldest sea port there. It is formally belonged to the Dutch, but the later this port are driven out in the year 1751.\textsuperscript{264}

The main trust for the development of marine fisheries was the introduction of mechanised fishing boats which started in 1955, together with the training of fishermen in handling of modern craft and gear. Both the Government of India and State Government tries to improve their techno-socio-economic conditions by various schemes implemented under the five year plans. In order to assert the impact of the benefits and the development in the techno-socio-economic conditions the Government of India have now entrusted this work to the various State Governments including Tamil Nadu.

From time immemorial the inland waters and in-shore areas have been used for subsistence fisheries. Till 1950’s both inland and marine fisheries were capture fisheries from the natural resources. The fishermen used indigenous fishing crafts and gears. After independence, efforts were taken

\textsuperscript{264} Interview with Thiru Robin, Fishermen, Colachel, on 12\textsuperscript{th} November 2004.
for the development of fisheries, the major objectives being the improvement of the socio-economic conditions of fishermen and additional fish production of combat mal-nutrition.²⁶⁵

In order to provide scientific base for long term development, the Government of India set up the Central Marine Fisheries Research Institute, (CMFRI) the Central Institute of Fisheries Technology (CIFT) and the Central Institute of Fisheries Education (CIFE). These institutes generated new technologies. The State Government through its plan schemes provided assistance to fishermen and created infrastructural facilities for the development of fisheries.²⁶⁶

In 1964, the third five year Plan there was a proposal to construct 400 mechanised boats and it was to be manned by fishermen trained in the fisheries training centre established at Nagapattinam and Tuticorin. Training is imparted to 10 fishermen candidates for a period of 10 months at the fisheries training centre at Madras. As more trainees are required to man the increased number of boats to be constructed during the third plan period, the Director of Fisheries has proposed to raise the strength of the trainees at the fisheries training centre at Madras from 10 to 20 on the basis of the strength obtaining in the other two training centres at Turicorin and Nagapattinam. The extra cost involved for training additional candidates works out of Rs.6,060/- towards stipend to additional ten trainees for one

²⁶⁶ Ibid. p.2.
year and Rs.500/- for purchase of additional furniture for the institution. So in this proposal has accepted in the Finance Department.267

The various officials in the fisheries department implement the fishermen welfare schemes. It is unfortunate the Government of Madras abolished the post of Director in 19th October 1953 and this department under the control of Industries and Commerce Department. Later the Government of Madras realised the importance of developing it and the department was revived on 1st April 1958, which gave an impetus for the increased catches and implementation of welfare schemes.

**Marine Fisheries**

The fisheries department to take the energetic steps to develop marine fisheries. In the second five year plan Government of India introduced many developing schemes to fishermen. The major objective of marine fishing development consist of mechanising the fishing operations by the provision of mechanised vessels, use of modern gear and materials, creation of infrastructure facilities for landing and berthing transport processing and materials creation of infrastructure facilities for landing and berthing, transport processing and freezing. To organise marine fishery on sound modern and industrial lines was not an easy task since there was reluctance on the part of the private entrepreneurs to take to fisheries and there was reluctance on the part of the traditional fishermen to improve their economic prospects owing to various reasons. The fisheries department had to surmount these initial obstacles.268

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267 G.O.Ms.No.1894, Food and Agriculture Department, dated 19th June 1964, TNA.
Tamil Nadu is third in rank in the contribution of marine fish landing in India. It accounts for about 2.32 lakhs tones per year which is about 157 of all marine fish landings. In 1985-86 the expert marine fish production of Tamil Nadu is Rs.60 crores.269

In 1973 the population of marine fishermen was about 4.64 lakhs, out of which about one lakh marine fishermen were actively engaged in fishing profession. Another 60,000 persons were engaged in inland fish production in the state. They were using traditional fishing crafts like catamarans, (about 25,000 in number) and canoes (about 500 in number) and various types of fishing nets. About 50 per cent of the marine catches are disposed off locally in fresh condition, 35 per cent either sun dried or salted and the balance frozen, canned or converted into fish-meal which is a recent development.

The availability of various fishery resource as in the inshore, off shore and deep sea was meager. Hence systematic survey and exploration had to be conducted. An assessment of the lending and berthing facilities at various points along the coast had to be made. Modern fishing have became an organised industry, the State needed well trained technicians for various jobs in the fields of processing, freezing, gear technology. Servicing and maintaining of mechanised vessels, playing of mechanised vessels with sophisticated equipment.

The Fisheries Department of Madras established four inshore fishery survey stations at Madras, Cuddalore, Rameswaram and Cape Comorin. These stations did valuable work in locating the fishing grounds shrimp lobster, silver bellies and catfish. The survey station also introducing improved fishing gear for commercial purpose. In order to supplement the efforts of the off shore stations of the Government of India setup at Tuticorin and Madras.\textsuperscript{270}

The fisheries department was also established the four boat building yards, two at Madras, one at Nagapattinam and one at Mandapam. Fisheries Department also constructed and distributed as far 841 number of mechanised vessels till the beginning of the fourth plan. In this plan period 1000 mechanised vessels would have been introduced but most of these vessels are small of the range of 30 and 32.

Fishing gear is an important item in mechanised fishing. It should be the main objective to improve fishing gear even in respect of traditional fishing. There is thus a vast area to be studies in respect of mechanisation of fishing. Raip mechanisation in fishing brings about social consequences. Quite often the traditional fishermen are to charge the habit and recent introduction of larger sized and more powerful mechanised vessels. In this period so many conflicts arise between traditional fishermen and mechanised fishermen and also mechanised vessel owners and traditional craft owners. Such conflict indicate the existence of social tension owning to the introduction of new methods and new technology.\textsuperscript{271}

\textsuperscript{270} \textit{Ibid.}, January to December 1973, Government of Tamil Nadu, 1973, p.57.
\textsuperscript{271} \textit{Ibid.} p.58.
The implementation of various developmental schemes by the department, the fish production has been increased to many field in the recent years, following reasons to increase the fish production given below:

(i) mechanisation of fishing crafts;
(ii) introduction of man-made fibres;
(iii) establishment of ice plants, walk in cooler and processing plants for preservation of fish;
(iv) making available transport vehicles for the transport of fish from the landing centres to marketing centres;
(v) providing landing and berthing facilities to the mechanised crafts; and
(vi) establishment of induced carp spawning centre and to provide adequate space for rearing the hatchlings into fiberlings in the fish farms to increase the major constraint in the inland fish production.

About 70 per cent of the marine fish production is contributed by the traditional sector who are operating about 42,000 non-mechanised crafts which consists of catamarans, canoes and vallams. Therefore, it was felt that necessary assistance was required to improve the efficient of the traditional crafts and it was proposed to give separate allocation for extending financial assistance to the traditional fishermen for distributing of fibre glass boats mechanized of traditional crafts with inboard/outboard motors nets.  

The primary objectives of the fisheries department are to increase fish production and productivity of this sector, develop fishing and allied

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industries and promote the socio-economic conditions of the fisher-folk. Tamil Nadu is endowed with a rich fishery potential with a coastline of about, 1,000 kms. In 1986-87 survey in Tamil Nadu totally 4,301 mechanised/motorised crafts (2,432 wooden boats, 82 F.R.P. boats, 802 country crafts, within board engineers and 985 catamarans with out board engines) are engaged in fishing. The indigenous non-mechanised craft consists of 28,132 catamarans and 8,439 country canoes. The estimated annual fish production during 1986-87 was 2.50 lakhs tones. Tamil Nadu Marine Fishing Regulation Act, 1983 had been enacted Tamil Nadu and enforced with a view to regulate the exploitation and to conservation of fisher wealth.  

In 1986-87 Government of Tamil Nadu introduced many schemes to fishermen. They are:

(i) Mechanisation of Traditional craft;
(ii) Beach landing craft;
(iii) Fishermen Training centres;
(iv) Development of Landing and Berthing Facilities;
(v) Infrastructure facilities;
(vi) Guide lights;
(vii) Ice-plant and cum cold storage;
(viii) Development of Fisheries in Brackish water;
(ix) Development of inland fisheries;
(x) Fish seed production;
(xi) Fish farmers Development Agencies;
(xii) Socio-economic Development of Fisher-folk;

Ibid., 1986-87, Government of Tamil Nadu, p.151.
(xiii) Development through co-operation and instance;
(xiv) Fishermen Saving and cum Relief Fund
(xv) Assistance from W.C.L.C. and supply of Nylon webbings to traditional fishermen;
(xvi) Issuing loans and Implementation of flouring schemes;
(xvii) Fisher Women Extension Service Scheme etc.  

During 1986-87 Government of Tamil Nadu sanctioned a sum of Rs.500 lakhs towards 20 per cent subsidy assistance limited to Rs.2,000 per unit to supply out board motors and in board engines for the traditional craft operators. Similarly, the M.P.E.D.A also provided a sum of Rs.965 lakhs toward 25 per cent subsidy assistance limit to Rs.2,500 per unit to provide out-board motors for the traditional craft operators. During 1986-87 subsidy has been released for 62 in board engine and 327 outboard motors. 

During 1986-87, 17 number of beach landing crafts 15 under N.C.D.C. and 2 under I.R.D.P. scheme were distributed to the members of marine Fishermen Co-operative Societies. The government also sanctioned number of guide light in 55 fishing villages so far guide lights have been installed enabling the fishermen to safely reach the shore with their crafts.

The sixth five year plan provided many major programme through the fishing fields. They are introduction of mechanisation programme and synthetic fibres, creation of landing and berthing facilities, establishment of 

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274 Ibid., pp.151-153.
275 Ibid., p.151.
276 Ibid., pp.151-152.
ice-plants, with mechanised boats operators which led to restriction of fishing time, areas etc. In view of the cost escalation and higher cost of fuel the operation and maintenance of mechanised fishing boats became uneconomical which resulted in fishermen not going for mechanised boats from the late seventies.\footnote{Study Report on Techno-Socio-Economic Survey of Fishermen Households in Tamil Nadu, op.cit., p.77.}

Under the seventh five year plan it has been targeted to raise the total annual marine and inland fish production to 5.20 lakhs tones with the measures taken by the government it is expected that by 1987-88 itself, production level of 4.80 lakhs tones per annum would be achieved. To develop inland fisheries the government had established fish farm facilities in various places like Tondikadu, Karangadu, Portonova and Ariyankundu.\footnote{Tamil Arasu, January to June 1987, Vol.I, Government of Tamil Nadu, p.16.}

Madras State has a long coast line besides the rivers and reservoirs which are exploited by the fishermen numbering more than a quarter of a million. The state is implementing schemes of marine and fishing industry to increase the production of fish. Special programmes envisage the construction and supply of improved mechanised boats and nylon nets and other accessories to the fishermen, provision of adequate harbour facilities and cold storage, transport and marketing facilities.

The fisheries department in the state, functioning under the control of Director of Fisheries is assisted by two Deputy Directors, one for inland and
the other for marine fisheries and three Assistant Directors, one each for marine biology, craft and tackle and planning.\textsuperscript{279} There are 12 divisions under the Directorate functioning in various parts of the state.

**Madras Division**

In 1964-65, the government introduced 10 schemes. They are; (i) Rural fishery, and Intensive Seed Collection, (ii) Salt Subsidy Scheme, (iii) Provision of Ice-Plant-Cum-Cold Storage, (iv) Transport facilities, (v) Improvement of Markets Assistance to Fishermen Co-operative Societies, (vi) Construction of Fish Nurseries of Induced Carp Spawning, (vii) Estuarine Fish Farm; and (viii) Major Reservoir Fisheries.

Under the salt subsidy scheme, the two fish curing yards at Sathankuppam and Kadapakkam were functioning satisfactorily. There is one cold store at Ennore and one ice plant at Neelankarai. The building work for the erection of ice plant-cum-cold store at Pulicat and Kovalam was in progress. To ensure quick transport facilities, the Co-operative Fish Marketing Union, Pulicat utilised one insulated vehicle for Transport of fish on live basis to Madras. In this division there are three Fish Marketing Unions at Neelankarai, Ennore and Pulicat. A sum of Rs.22,000/- was given to each union as loan for pooling and marketing the catches. A proposal for sanctioning subsidy for the fish market at Kancheepuram is under strutting. By way of Rs.13,500/- was distributed as loan.\textsuperscript{280} The Madras Fishermen Co-operative Federation was supplied 5,79,371 Kgs of Garware Nylon twine at subsidised cost valued at Rs.25,089.59/-. Loans and subsidies to

fishermen affected by cyclone and fire accident. were distributed to the extent of Rs.850/-.

During the period, a quantity of 1,574 Kgs of Nylon valued at Rs.23,776.12 was distributed to 13 groups of fishermen for fabrication of nets to be used in mechanised fishing boats. Ten number of 30 footer boats and one 25 footer boats were distributed to be 11 groups of fishermen. One set of nursery at Sriperumpudur, 2 sets at Acharapakkam and three at Kattankolathur were completed. In induced crap spawning experiments were conducted from which 187,250 hatchlings were obtained and supplied to blocks and to other waters in this division.281

Cuddalore Division

During this year, 1,547.289 fingerlings were collected from rural fishery demonstration tanks and local collection centres. A sum of Rs.7,328,32/- was realised by the sale of fish seeds. In this division comprising of South Arcot and North Arcot districts, 17 rural fishery demonstration tanks were maintained in which a total quantity of 6,197.510 kgs. of fish was caught and a sum of Rs.3562.50 kgs was realised caught and a sum of Rs.3,562.50 kgs was realised. The fishery rights of 33 river sources in South Arcot, 11 tanks in North Arcot district were sold in public auction to the Fishermen co-operative Societies and a total revenue of Rs.81,733/- was realised in the scale. A sum of Rs.18,700/- was given as loan to the four Fishermen Co-operative Societies namely, Omamapuliyur, Sathanur, Desur and Thaikal Thonithurai. One 2-ton ice plant with 2 tones

281 Ibid., p.187.
cold storage facilities was maintained at Cuddalore. The government approved and functioning the 17 Fishermen Co-operative Societies in this division. The formation of feeder roads from Panichamedukuppam and another road from Chettikuppam was under progress during the year 1964-65.

**Thanjavur Division**

During the year, a sum of Rs.14,140/- was distributed to the 3 Fishermen Co-operative Societies at Thuraikadu, Kodiakkarai and Dodiakadu. A total quantity of 414.761 kgs of Nylon twine at a cost of Rs.11,162.18 was issued at subsidised rates. During this year, 12,190 full sized, 11.88 under sized and 3,013 wormed chanks were collected.

**Nagapattinam Division**

The scheme of training fishermen in handling marine diesel engines and the operation of improved fishing gear from mechanised boars continued to operate. During this year 75 fishing trips were made by the training centre and a total quantity of 7.281 1/2 kgs of fish was landed by them and a sum of Rs.2,488.67 was realised by its sale. The construction of an overhead tank for the Ice plant was in progress at the end of this year.

**Sivagangai Division**

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282 *Ibidp.188.*

The special schemes like supply of cotton yarn, pablo boat, synthetic yarn, improvement of indigenous craft besides the useful schemes were implemented in this Division. During this year in the Ramanthapuram tanks 363,046 full, 44,547 normed chanks and in the Sivagangai tanks 96,525 full and 5,761 wormed chanks were fished.\(^\text{284}\)

**Indo Norwegion Project, Mandapam Camp**

The salient features of the project are, establishment of a boat building yard with Norweign collaboration besides ice-cum-cold storage plant with freezing unit and establishment of fishermen training centre. It is proposed to survey and explore fishing grounds. A fish meal plant, a fishermen colony and a health centre have also been established.

**Exploratory Survey**

This survey has been started with Norwegian boats M2 and M3 and also with inshore fishing station boats Ist-1,2,3 and 4. These operations were discontinued due to the havoc caused by the cyclone and the tidal wave that struck this coast on 22nd and 23rd December 1964. As soon as the boats are repaired, the exploratory survey will be revived.\(^\text{285}\)

The other divisions are, Madurai, Manimuthar. Tuticorin, Nagercoil division, Mettur Dam Division, Bhavanisagar division, inland fisheries Research Thiruvidaimarudur.\(^\text{286}\)


The Tamil Nadu Fisheries Developments Corporation (TFDC) was established in July 1974, with a view to undertake the promotion and developments of commercial activities in the fisheries sector, such as operation of deep sea fishing trawlers, improvement of reservoir fisheries, procurement and marketing of fresh fish to public and provision of various infrastructural facilities. The Tamil Nadu Fisheries Development Corporation is needed by the Managing Director who is assisted by a term of Technical Officers like the Central Manager, Senior Managers, Deputy Managers etc. and other financial experts.287

Objectives

1. Deep sea fishing operation of trawlers, small fishing, mechanised fishing boats and vessels.
2. Culture and harvesting of inland fisheries.
3. Procurement, wholesale and retail, import export freezing, canning and curing of fish and shrimp.
4. To provide service and assistance of all kinds with regard to any form of fishing fish culture.
5. To conduct fishing in territorial waters and high seas at all seasons using different types of fishing trawlers, vessels modern gears.
6. To increase the protein rich fish production through mechanisation programmes and strengthening Fishermen Co-operative Societies.
7. To implement social welfare schemes for the fishermen due to the loses of their fishing implements during the floods and cyclones.288

288 Ibid pp.97-98.
The Tamil Nadu Fisheries Development Corporation is first and foremost aims to established the reservoir to fishery development. So the corporation has taken up the five reservoir viz; Sathanur Aliyar, Amaravathi, Thirumoorthy and Bhavanisagar. To provide the job opportunities to the fishermen the Tamil Nadu Fisheries Development Corporation Limited has taken up fishing operation to introduce the 32' mechanised fishing boats belong to the Tamil Nadu. The fish seed production units as Sathanur dam and Aliyar as well as the fish forms attached to these Reservoir. Its also have been transferred to the control of the corporation.\textsuperscript{289}

The corporation has envisaged a scheme to utilise the brackish water resources for culturing fish and thereby to increase the income of fishermen besides getting substantial foreign exchange. The production of deep sea fishing the Corporation has acquired two deep see trawlers from Mexico for exploiting the resources to these trawlers, the Corporation has to acquire more vessels for increasing fish production, the main objective to get more foreign exchange besides meet the demands of the public. The corporation has planned to process and export fish which will increase the income of fishermen and increase employment opportunities.\textsuperscript{290}

The demonstrations were conducted by foreign exports in the use of advanced technical equipment in the deep sea fishing and experiments were conducted to evolve suitable design for the motorised surf landing craft during the year 1655-56. Deep sea fishing operation were carried on in the

\textsuperscript{289} \textit{Ibid.}, p.98.
\textsuperscript{290} \textit{Tamil Arasu}, January to June, Government of Tamil Nadu,1978, p.21.
State at different centres with four motor fishing vessels and with indigenous crafts, viz; eight dugouts, five canoes and two catamarans. The poor results achieved are attributed to the efficient and uneconomic old motor fishing vessels of the department, purchased from the navy disposals in 1946. Most of the vessels have been condemned by the government and disposed to some extent by the new fishing vessels allotted to the State under the T.C.M. aid. With a view to assess properly and co-ordinate both the inland and marine fisheries research work conducted at the departmental biological and technological stations. The Government constituted a State Fisheries Research Council. The council was inaugurated by Minister for Agriculture on 25th January 1956.\textsuperscript{291}

**Shrimp Culture**

Scientific aquaculture is a profitable industry and it is a unimaginable fish production of the future. Brackish water prawn culture has gained momentum on account of the high unit value obtained for prawns, both in the internal and external markets. Tamil Nadu has about 80,000 hectares of brackish waters adjoining the sea shore. Out of which about 27,000 hectare can be readily utilised for prawn culture.

The fisheries department had been doing considerable research work on the brackish water fish culture in the pilot forms at Adyar (Madras), Portonovo (South Arcot) and Manakudi (Kanyakumari). Two more research units have been established one is Pulicat (Chingleput) and another in Marakanam (South Arcot).

Large number of private parties were interested in learning prawn culture techniques and in setting up prawn farms. In order to encourage and assist them, the department of fisheries arranged to give training for 80 persons and among them, about 59 persons availing themselves of these training have taken up prawn culture in brackish water spread in Tamil Nadu. The government have ordered that brackish water spreads which are away from the reach of the villages and where capital and expenditure will be exploited by the government agency, and the area close to the fishing villages should be allotted to Fishermen Co-operative Societies consisting of actual working fishermen as members. Following these policy the department had undertaken a survey to identify all suitable brackish water spreads. In places where Co-operative Society could be formed enlisting active fishermen the department would provide them the required staff to give technical guidance in developing and managing the farms. The department would also assist them to secure the required finance from institutional agencies as the government may not be able to provide the entire finance.292

The Tamil Nadu Fisheries Development Corporation was introduced a few small size fibre glass boats fitted with outboard motors to select fishermen on an experimental measures and its economic sounds. If these experiments proved successful the Tamil Nadu Fisheries Development Corporation will launch a massive programme of large scale introduction of fibre glass boats to increase the fish production and to improve the economic improvement of fishermen.293

292 *Tamil Arasu*, December 1980, Government of Tamil Nadu, p.36.
The government has launched a major Integrated Marine Fisheries Development Project with assistance from National Co-operative Development Corporation at a total cost of Rs.15.88 crores. In this project there will be benefit for 6,050 fishermen throughout India. The outlay on this project in 1994-95 was Rs.3.12 crore. This project covered the fishermen in Thanjavur, Ramanathapuram, V.O.Chidambaranar district, Chingleput and Kanyakumari districts.294

Fisheries development schemes are implemented through two agencies of the government, viz; Directorate of Fisheries and the Tamil Nadu Development Corporation. Various development schemes were implemented through these agencies to fishermen. To provide infrastructural facilities, the State Government has forwarded a proposal for the development of a landing jetty at Tondi in Ramanathapuram district involving an outlay of Rs.41 lakhs. The government had also approved the proposal of Tamil Nadu Fisheries Development Corporation to establish along with Southern Petro Chemical Industries Corporation Limited (SPIC) company in the joint sector for the manufacture and marketing the culture pearls. The estimated cost of their project was Rs.40 lakhs and it will involve collection of pearl oysters, culturing and marketing of the pearls. The government is also assisting the Fisheries Development Corporation with a share capital of Rs.20 lakhs for the installation of an ice plant in Madras fishing harbour in the next financial year. In order to improve fresh

water fisheries, Rs.24.70 lakhs has been set apart in the next financial year to carry out repairs to certain dams and ponds.\textsuperscript{295}

The government approved the proposal of the Department of Industries and Commerce for the establishment of a fishery propaganda unit and the appointment of a Fishery Information Officer. Madras is the headquarters of this unit. The various schemes are drawn depending on the needs of the localities requirements of the industry and development.

Since 1947 the fishing industry got erratically changed. The government introduced a lot of schemes not only for the development of fishing but also for the upliftment of the socio-economic life of the people. The government to provide the loan facilities through Co-operative Societies to the fishermen for the purchase of fishing instrument. To the improvement of the women-folk the Co-operative Societies gave loan to start fish business, which gave them relief from the local money-lenders, who used to suck the very vital blood of the borrowers extracting heavy interest. In 1953-54, all round progress in the different branches of the fisheries department. Main achievement was directed to the production and preservation of greater quantities of fish than in previous years to meet the present food scarcity.

The improvement in the fishing gear more sharks were caught and consequently more fish liver oil was produced. In south Kanara 32,162 lb of liver oil was produced in 1953-54 against 19,643 lb in previous year. The Assistance of the Food and Agriculture Organisation of the United Nations

\textsuperscript{295} G.O.Ms.No.7, Development Department, dated 21\textsuperscript{st} January 1946, TNA.
to improve deep sea fishing. Two Danish boats were received from the Food and Agriculture Organisation. New equipment for developing marine fisheries was also received. 296

The Governor of Madras approved the proposal of the Director of Fisheries to lend one of the motor fishing vessels belonging to the fisheries department, to the new Asia Trading Corporation, Madras for a period of 6 months only in the first instance for conducting deep sea fishing operations off the Madras coast subject to the following conditions.

1. The Corporation should meet the entire maintenance and recurring charges of the motor fishing vessels and deposit with the Deputy Director of Fisheries (North) sufficient amount to meet out the pay and allowances of the crew of the vessels, for a period of six months.

2. The vessel will be placed at the disposal of the Corporation to be used for deep sea fishing purposes free of here and depreciation changes for a period of six months in the first instance.

3. The Corporation should make its own arrangements to purchase its requirements of high speed diesel oil, mobile oil etc.

4. The Corporation should arrange with the Port-trust and port authorities regarding payment of port dues, levies, berthing charges etc.

296 Ibid., p.164.
5. The Corporation should make their own arrangements for transporting and marketing of fish caught by the vessel.

6. The Corporation should execute a bond for Rs.20,000/- as security and undertake to return the vessel, equipments and fishing implements given to them in the same condition as when it was handed over to them on the termination of the charter after 6 months.297

The Tamil Nadu Fisheries Development Corporation (TNFDC) has rapidly expanded its network of fish in retail outlets. Soon after the formation of the TNFDC the marketing activity has been taken up by them with a view supply the public at reasonable price. It has opened 34 retail fish stalls in Madras, Coimbatore, Udumalpet, Pallachi, Madurai and Palayamkottai. with improved technologies in production, processing, transport and marketing.298

Chank Fishery is one of the sources of revenue to the fisheries department. Chank fisheries of Tirunelveli coast and Sivaganga coast were conducted departmentally while the chank fishery rights of the Ramanthapuram district coast, South Arcot and Chingleput districts coasts were leased to private parties on tender system.

Fishing industry considered as one of the ancient industries in the world. After the industrial revolution of science and technology, the demand of fish is one of the major food material of the world. The

297 G.O.Ms.No.1332, Development Department, dated 1st April 1950, TNA.
traditional instrument of fishing such as cotton nets, catamarans, canoe have been gradually replaced by nylon nets and machine boats, using satellites for finding fish gatherings is another important growth in fishing industries.

During 1947 fishing industry got substantial growth when the Government of India established the Central Marine Fisheries Research Station at Mandapam and Central Inland Fisheries Research Station at Calcutta all the programme was placed on a social, scientific basis. At the same year the Central Deep Sea Fishing Station at Bombay was also set up. It launched new scientific techniques in the art of fishing by means of latest scientific inventions. So, these scientific research organisations borrowed western method of fishing techniques and implemented into Indian fisheries. The factors such as seasonal fishing, availability of fishes in certain places and times and techniques applicable to such situations have been analysed. The results of the research have been informed to the fishermen through medias.

The fishing industry in India is still in the catamaran stage and everything is done by the manual labour. Small nets are used which are easily avoided by the fish, much energy is expanded in rowing from the fishing grounds.

Another handicap for Indian fishermen is the tropical climate and the fish get trained by the time, they reach the shore. The remedies are live cars,

\[\text{299} \text{ Marine Fisheries and Bye Products 1949, A Compilation from various Books and Journals, only for the private use of the fisheries student of Andhra Polytechnic, pp.10-11.} \]

\[\text{300} \text{ Ibid.} \]
refrigerators, power boats for quick transport and salting in the sea itself. Refrigerator is a costly method and can be done only of rodually.\textsuperscript{301}

The fisheries development involves two aspects, the first is an increase in production and the second is the exploitation of the production potential. Therefore development is a technical aspects, the development of fisheries also depends among other things. On factors like, adequate finance suitable new technology, growth of fishing nets, extension of fishing areas, introduction of new techniques of aquaculture, scientific and technical man power in research development and flow of technical information and assistance from both internal and external source. In all these the government, has a vital role to play in securing the above inputs and assistance to forester the growth of fisheries. Fisheries occupy a promenial place in the economy of Tamil Nadu. The main benefit which can be derived from fishery development and associated growth can be categorised under five different heads viz; (i) Nutrition and food supply, (ii) Income, (iii) Employment, (iv) Infrastructure; and (v) Rescue and defence services.\textsuperscript{302}

The government established on experimental sea fisheries station at Tellichery on the west coast. Research and experiment stations were established in different part of the Presidency such as Ennore, Pulicat, Cannanore and Tanur. Research were carried out into technological, biological, hydrographical and other scientific aspects. Machine boats were also introduced for fishing in the deep seas. The new type of nets were also

\textsuperscript{301} Ibid, p.11.
introduced during the first half of the 20th century to enhance fishing. It is also given to pearl fisheries in Tinnevelly and Ramnad districts.

Regarding inland fisheries the Madras Government adopted certain measures to develop the fishing in tanks, lakes and dams. Special attention was also given to grow new varieties of fish in the tanks. So, that the government provided transporting and marketing facilities of fish in the nook and corners of the state and outside.  

Ennore Experimental Station

It was established in 1908 near Madras, to experiment in salting curing and preservation of fish. Sir Frederick Nicholson was sanctioned to this station and it includes for the following purpose;

(i) To experiment with large sailing boats and upto date fishing nets and implements to fish the deep sea as a supplement in inshore catamaran and canone.

(ii) To experiment with the best methods of preserving and bringing fish fresh to shore and putting in cheaply on the market free from taint.

(iii) To effect improvement in indigenous methods of cure and introduce improved methods such as smoking wet pickling, mealng, canning and refrigeration.

(iv) To carry out observation on edible oysters and conduct experiments in oyster culture.

303 Soundari, Development of Fisheries in Tamil Nadu Since 1947, University of Madras, Madras, Un Published Thesis, 1989, pp.5-6
(v) To carry on biological studies on fish and fisheries.

During 1908, salting and smoking arrangements were made and the experiments carried out related to (i) the observance of absolute cleanliness especially in the gutting shed and through washing of fish; and (ii) the use of clean salt.\textsuperscript{304} The bulk of work done at the experimental stations subsequently established consisted mainly of industrial experiments in curing, canning, oil and guano and refrigeration etc.

The “Hislaire” process of preserving fish by “Sterilisation” has also been tried, probably for the first time in India. The chlorine process, viz; that of steeping fish in electrolysed sea waters, is also under successful experiments. In curing the process enables as to use light salting by keeping the fish good while the fish is in light pickle and until it can be taken out, dried and smoked, such fish must, however, be consumed at an early date. The process will probably be applicable not only as above but in transporting fresh fish inland, since experiment has shown that fish even when cooked and eaten fresh, particularly losses the small of chlorine. The fluid used for electrolysis is a solution of our ordinary sea salt in water. This and the Hislaire process, and the preservative effect of a slight addition to the salt of a boric preservation are important demonstrations, but the experiments will be continued throughout the hot weather for further testing.\textsuperscript{305}

\textsuperscript{304} Report on the Committee on Fisheries in Madras, 1929, Government of Madras, 1929, p.43.
The Ennore Marine Experimental Stations works are, the keeping of fish fresh on the way to market and consumer, the curing of fish by salting and drying, smoking, the growth of oyster etc. Result of this method viz; (i) very poor supply and dearness of fish owing to the proximate of Madras and the inefficiency of the fishermen; (ii) impossibility of exact experiment owing to the uncertainty as to freshness to lather, to the possibility of taint; (iii) inefficiency of labour and want to interest due to the poverty of the local men and absence of any local curing industry. Certain success in operation required that the experiments should be conducted on a large commercial scale, other experiments were impossible in the absence of cheap and abundant fish, especially shoaling fish such as sardonic and mackerel.\textsuperscript{306}

The Indian fisheries sectors has been witnessing major changes since independence. Attempts have been initiated to introduce technological intervention to boost up the exploration of marina fishery resource. Mechanisation of fishing crafts initiated in the first five year plan period was one of the major developments. It was reported that by the end of first five year plan (1956) 650 boats were mechanised in India most of which were in Bombay. Due to the incentives offered in the shape of technical and financial assistance by the Central and State Governments new designs of mechanised boats have been developed in the States of Gujarat, Maharashtra, Karnataka, Kerala, Tamilnadu, Andra pradesh, Orissia and West Bengal.\textsuperscript{307}

\textsuperscript{306} Ibid., p.11.
\textsuperscript{307} Titto D.Cruz (ed.), \textit{Artificial Fish Habitate Impact on Artificial Fisheries}, South Indian Federation of Fishermen Societies, Karamanas, Trivandrum, 1995, p.1.
Mechanisation in mid 50’s and motorisation in early 80’s are the two major hand marks that created revolutionary changes in the fisheries sectors. Prior to mechanisation the traditional sector was responsible for the entire fish production in the state. Until the 1960; s mechanisation which was limited only to a handful of boats gradually gained momentum by artisanal fishermen. The mechanised boat with active gear, steadily sought and slowly established a lead in the production over the artisanal sector. According to Central Marine Fisheries Research Institute’s (CMFRI) catch data, during these three decades (1950 to 1980) several upsurges have been observed in the total landings. But increase in effort leading to over-exploitation has coursed a crisis in the fisheries sector especially the traditional sector where livelihood solely depends on fishing. The uncontrolled expansion of coastal trawlers and purse seine fleers has resulted in a deterioration of the fish resources and the socio-economic conditions of the artisanal fish workers. Today the crisis has further deepened with the adoption of joint venture deep sea fishing with the collaboration of high-tech foreign vessels over the limited fishery resources of our country.\textsuperscript{308}

Motorisation and the subsequence development of new crafts such as the plank transom boat plywood canoe and the increase in size of existing craft (thanguvallam) adoption of new gear materials like nylon (Polyamide multi-filament) and monofilament and the innovation of high efficiency fishing gears like ring seine enabled the traditional fishermen to widen their fishing area and increase their fishing potential for competing with the

\textsuperscript{308} \textit{Ibid.}, pp1-2.