



MADRAS CHRISTIAN COLLEGE (Autonomous)

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ECONOMIC CONTRIBUTIONS OF FISHER WOMEN OF PULICAT LAKE-A STUDY

UGC FUNDED MINOR RESEARCH PROJECT

FINAL REPORT (2018-2020)

REF: F. No. MRP-7046/16 (SERO /UGC) Link No: 7046 Dated: 25th January, 2018

REF: No. F. MRP-7046/16 (MRP/UGC-SERO) LINK NO: 7046 Dated: 2nd July, 2019

SUBMITTED TO THE



**UNIVERSITY GRANTS COMMISSION
NEW DELHI**

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ACKNOWLEDGEMENT

At the outset I thank God the Almighty for lavishing his grace upon me to complete this project successfully. I owe my special thanks to the University Grants Commission, New Delhi and University Grants Commission South Eastern Regional Office , Hyderabad for selecting my Project Proposal and sanctioning grant of Rs. 2,25,000/- (Rupees Two Lakh Twenty Five Thousand Only) for conducting the Minor Research Project.

I am deeply grateful to Dr. Alexander Jesudasan, Principal and Secretary, Madras Christian College for his constant support and encouragement given to take up projects.

I would like to thank Bursar and his Office Staff for their support. I would like to acknowledge the Head, Department of Public Administration for processing my papers. I would like to thank all my Colleagues and Students for their support.

I would like to thank Mr. Samadanam and his team for assisting me in taking a documentary on Pulicat Lake. I would like to thank Mr. Vinoth, Mrs Rajam, and Mrs. Sumithraa for assisting me in data collection at Vairamkuppam village. I would like to thank Mr.Karuna, Care taker of EBL, MCC for cooperating during my visit to Pulicat. I would like to thank Mrs Hemavathi, Mr.Sathish Kumar, Mr.Elango for assisting me during data collection at all the villages in Pulicat. I would like to thank Mr.Melvin Godfrey for helping me in data entry. My sincere thank to Dr. Madhana Gopal for assisting me in the statistical analysis. My heartfelt thanks to Mr.Emmanuel Johnson for preparing the data visualization of my findings.

I would like to place on record the constant support and guidance rendered by my beloved husband Dr.R.Moses Inbaraj, Former Director of EBL, MCC and Former Head Department of Zoology, Madras Christian College. Last but not the least I would like to thank my beloved children Dr.Amy Moses and Mr.Andrew Moses for being a pillar of strength and support to me throughout my project.

Dr.B.MADHANA REKHA

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CHAPTER I

INTRODUCTION

Women represent 50 percent of the population, 30 percent of the labour force, perform 60 percent of the working hours, receive 10 percent of the world's income but own less than 10 percent of the world's property. Although, women are involved in the economic participation through production of goods and services which is accounted in the national income statistics yet, their contribution is not recognized as economically productive. It is considered to be 26 percent compared to 52 percent of men.¹ The market oriented concepts ignore women's contribution and terms it as non-economic, non-market and house hold work.² India's rural population accounts to 68.8 percent (83.3 crores).³ A large proportion of the rural population is dependent on agriculture and allied activities like horticulture, animal husbandry and fisheries. The National Commission for Enterprises in the Unorganized Sector (NCEUS) Report 2009 stated that out of the 93 percent of the total workforce of India in 2017. The informal workers would be 86-87 percent and the remaining 6 percent will be in formal sectors.⁴ These workers do not have any job security, income security or social security and are therefore extremely vulnerable⁵.

Even though there is no attraction in the unorganized sector, yet women seek employment in this sector because of their ignorance, illiteracy, easy entry and exit, lack of skills, less waiting period and irregular nature of employment. Moreover, the poverty and economic necessity has compelled women to join in this sector. These women mostly belong to marginalized sections such as scheduled castes, scheduled tribes, most backward classes and economically weaker sections of the society. Women in poor families accept any form of employment without considering the nature of jobs. The increasing cost of living has compelled the poor women to choose such jobs. They feel the burden of family expenditure and prefer to shoulder the families responsibility. Women in poor societies perform dual

¹ www.legalserviceindia.com

² Samitha Rani Natarajan, "Women and Employment", Jnanada Prakashan (P&D), New Delhi, 2016, p:44

³ <http://censusindia.gov.in/2011-Common/CensusData2011.html>

⁴ www.nceus.gov.in, 2009.

⁵ Meenu Agarwal. "Rural women workers in India's Unorganized Sector", New Century Publications, New Delhi, 2012, pp: 6-7.

function as they take care of children at home and also perform their duties of employment.⁶ (Meenu Agarwal, 2012).

According to the International Labour Organization (ILO) more than 45 percent of women all over the world in the age group of 15 to 64 are contributing to the economy to a significant proportion. Females suffer from two sets of discrimination. Firstly, pre-market discrimination that is lack of access to factors such as education, training, experience and so on which develop capital and secondly, market discrimination namely differential wages for similar work.⁷ (Bisoyi, Tanuj Kumar. 2005).

The population of India has been increasing at alarming rate resulting scarcity of land. Even the agricultural land is being utilized for domestic use due to population explosion. Due to this reason, the fishery, poultry, etc., are gaining importance now-a-days. The importance of fisheries is well known as a provider of livelihood to several million fishers, prime mover of coastal economy and a major foreign exchange earner. Development of technologies coupled with extension activities has pushed Indian fish production to manifold, particularly to become the second largest inland aquaculture fish producer and a thousand fold increase in the value of marine products export. At present the contribution of fisheries to the Gross Domestic Product of the country is estimated 1.4 percent, whereas the export earnings of fish products reached Rs.6443 crores.⁸ (Samanta, R.K. 2005)

Unorganised Sector Defined:

The term unorganized sector was first initiated by Keith Hart in 1971 in a study of Ghana. The study reveals that informal sector has the characteristics like easy entry for the new enterprises, reliance on indigenous resources, family ownership, small scale operations, unregulated and competitive markets, labour intensive technology and informally acquired skills of workers.

In India, the term informal sector has not been used in the official statistics or in the National Accounts Statistics (NAS). The terms used in the Indian NAS are 'organised' and 'unorganised' sectors. The organized sector comprises enterprises for which the statistics are available from the budget documents or reports etc. On the other hand, the unorganized sector

⁷ Bisoyi, Tanuj Kumar. "Women in Fishery", Mohit Publications, New Delhi, 2005, p:3.

⁸ Samanta, R.K. (Ed)., "Empowering Rural Women :Issues, Opportunities and Approaches", The Women Press, Delhi, 2005, p:166

refers to those enterprises whose activities or collection of data is not regulated under any legal provision or do not maintain any regular accounts. The unorganized sector has to be considered as a subset of the organized sector. In the unorganized sector, women are still not on top.⁹ (Meenu Agarwal, 2012). The following are the characteristics of unorganized sectors:

(a). **Ease of Entry:** The informal sector is characterized by its mobility of labour. Villagers leave their native places in the ambition that the urban income would be higher than their poor agricultural income.

(b) **Small Scale Operations:** Informal sector generally comprises of tiny establishments. The sector may be single worker establishments and those which are self-employed.

(c) **Family Ownership of Enterprise:** The functional division of labour and specialization is limited and most of the functions are to be performed by the owner. The family labour is extensively used in the sector.

(d) **Labour Intensive and Adaptive Technology:** The informal sector is characterized by small-scale operations labour intensive techniques, low levels of income and indigenous ownership.

(e) **Lack of Support and Recognition from the Government:** Informal sector activities have grown without any government support. The organized capital market, bank finance, foreign technology, imported raw materials, protection from foreign competition etc. are not available to the informal sector enterprises on account of meager material resources.

(f) **Competitive and Unregulated Product Market:** The informal sector in developing countries is generally found to have competitive and unregulated market.

(g) **Unprotected Labour Market:** The labour market in the informal sector is supposed to be unregulated and highly competitive because of absolute freedom to entry in the sector.

(h) **Work situations are not in official record** and working conditions are not protected by law.¹⁰(Sarkar, Siddhartha and Bhuimali, Anil, 2005).

⁹ Meenu Agarwal.(2012). "Rural women workers in India's Unorganized Sector", New Century Publications, New Delhi, 2012, pp:2-5.

¹⁰ Sarkar,Siddhartha and Bhuimali, Anil, "Disadvantaged Women in Informal Sector: A Study of Domestic Help and Bidi Workers, Abhijeet Publications, Delhi, 2005, pp:1-7.

NEED FOR THE STUDY

Economic contributions of Fisher women of Pulicat Lake has been chosen for the present study because of the fact that women hold the key position in the family and influences the general development of the family through their work participation, accepting family planning devices and extending financial support to family more specifically, in fisher women households. According to a recent Human Development Report of UNDP, 70% of the people living in poverty are women. This is because women face a whole series of complex cultural, social, traditional, economic and legal constraints that even poor men do not face. They have far less opportunities than men to get education and training and therefore possess very few skills necessary for today's world. There appears to be a definite feminization of poverty. When a community as a whole is poor and downtrodden, the women folk in the community have to bear the brunt of it all the more.¹¹(Bisoyi, 2005). The husbands of fisherwomen are not working either due to oldage or alchoholism.¹²

Fisherwomen buy fishes from wholesale or retail for the reasons like less catch. Fisherwomen start their work very early in the morning everyday. They work for more than 8 to 11 hours a day. Women had to wait for the return of boats. Then they participate in a competitive auction. Whenever the catch is less, there will be greater demand. The person who can make the highest bid will purchase and later on sell it for a good price. Fisherwomen who are financially stronger are the beneficiaries. If the catch is more then the poorer sections also participate in the market. There is a class hierarchy that is formed over the years of experience among the fisherwomen who have their own menfolk in the boat or their own husbands who have brought the catch. In the middle of the hierarchy there are women who purchase fish from the first category of women and sell it in the market. In the last rung are women who purchase small shares from other sources. More number of women buy fish in the retail sale ranging from Rs 500 to Rs 2000. It implies that most of the fisher women are small scale fish vendors. Then the fisherwomen have to transport the fish and sell in the market. They use ice to preserve the fish. They spend many hours in selling the fish and there

¹¹ Bisoyi p: 8

¹² Rekha R.Gaokar, Maria D.C. Rodrigues and Patil R.B, "Fishery Management", A.P.H. Publishing Corporation, New Delhi, 2015, p: 66.

is lot of fish which is spoilt due to lack of proper storage facilities. Majority of the fisherwomen spend 8-12 hours per day on procuring and selling the fish.¹³

Fisherwomen play a significant role in general livelihood of fishermen family. They not only maintain all day to day family and domestic activities, but also contribute significantly towards the most of fisheries and aquaculture activities. Thus role of women, it's contribution towards the development of the society is not scanty, at all.¹⁴ (Samanta, R.K. (ED). 2005).

But, women are systematically excluded from profitable sectors of fishery and marine related activities. Therefore unequal power relations and access to resources has let to continuing poverty of the coastal communities.¹⁵ Moreover, the economic reforms of Liberalization, Privatization and Globalization (LPG) did not include any specific package for agriculture.

With a contribution of 5.15% towards agricultural GDP of India alone, the prospects of fisheries for the rural people are immense. It also employs over 14 million people in the sector. While traditionally the role of women in this sector was mostly restricted to post harvest activities like processing and marketing and was considered marginal, nowadays their role as active participants is being recognised. The scope of activities for women in this arena include transportation of fish, sales of fish and dry fish, fish cleaning, drying, fish feed development, ornamental fish culture, fin-fish culture, crab fattening in cages and pens, shrimp processing, shrimp, crab and fish farming and hatchery management, development of value-added fish products, aquaculture by-products business, sea weed culture and drying etc. The income thus generated adds as a supplemental income to support their families. However, there are various impediments in ensuring the economic development of the women engaged in this sector which includes illiteracy, lack of awareness of governmental schemes, social taboos and conservative norms, income disparities and other inequalities arising out of unattended gender disparities and should become the focus of addressing the development of these communities.

With the advent of Blue Revolution and its revamped version, today the fisheries sector in India constitutes about 6.3% of the global fish production making it the world's third largest

¹³ Ibid, pp: 67-71.

¹⁴ Samanta, R.K. (ED). "Empowering Rural Women : Issues, Opportunities and Approaches, The Women Press, Delhi 2005, p:166).

¹⁵ Subhadra Mitra Channa and Marilyn Porter. "Gender, Livelihood and Environment", Orient Blackswan Private Limited, New Delhi, 2015, p: 95.

producer of the same. The contributions of aquaculture having earned the tag of being the ‘second largest producer’ globally forms the major chunk of this consistent achievement with an overall projected growth rate of 6% as per the Twelfth Five Year Plan. With about 2200 species of fish – warm fresh water (24.7%), cold water (3.3%), estuaries (6.5%) and sea (65.5%) the vast and rich diversity available for sustainable utilisation is immense. The contribution of this sector to GDP is estimated to be at about 1.07% with annual export earnings alone contributing to about 33,441.61 crores.¹⁶ However, while aquaculture has been trying to meet the increasing demands by also incorporating culture based capture fisheries, the production levels of marine fisheries seems to be dwindling over the years owing to overexploitation and having reached the maximum sustainable goals besides lack of better technological innovations and management paradigms focus on achieving sustainable livelihoods.

Understanding the importance of the sector, there are various schemes in place at the Central level which include Development of Inland Fisheries and Aquaculture, Development of Marine Fisheries, Infrastructure and Post-Harvest Operations, National Scheme for Welfare of Fishermen, Strengthening of Database and GIS for fisheries sector, Assistance to fisheries institutes, National Fish Development Board (NFDB) and Issuance of Biometric ID Cards to Coastal Fishermen. The NFDB under the Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, is involved with the expansion of aquaculture in fresh and brackish water, development of marine fisheries infrastructure and post-harvest operations and also welfare of the fisher folk.

WOMEN IN FISHERIES IN INDIA:

India has a coastline of 8,129 km with 3,638 fishing villages.¹⁷ India stands 7th largest fish producer in the world. Fish and fish products export has increased and at the same time the monetary value of export has been increased more than fivefold. Thus, the fishing sector in India has grown substantially over the past few decades.

Women play a key role in fisheries sector. They play a supportive role. The mechanization in fisheries has increased in export of fishing products. About five lakh women are involved in

¹⁶ “Annual Report 2016-17”, Department of Animal Husbandry, Dairying and Fisheries, <http://www.dahd.nic.in>

¹⁷ Vijaya Khader, “Empowerment of Fisher Women-in coastal ecosystem of Andhra Pradesh, Karnataka, Kerala and Tamil Nadu”, Agrotech Publishing Academy, Udaipur, 2008, p:25.

the post harvest sector of marine fisheries. It has helped to earn about seven thousand crores during 2002-2003. There is lack of information on quantitative data regarding employment, production and earnings of women in different segments. Among the four southern states, Tamil Nadu tops the list with 13 coastal districts, Andhra Pradesh and Kerala has nine districts each and Karnataka has three coastal districts. There are about 1465 fish landing centres and equal number of villages in these states with a coastline of 2864 kms. Among the maritime states Tamil Nadu is second inland fishing centres with 422 next to Andhra Pradesh which has 508 centres. The area of rivers is 31,026 kms, reservoir of 5.63 lakh ha, ponds of 16.52 lakh ha and brackish water area of 3.71 lakh ha which offers unique scope of aquaculture development. The total fisher population in Tamil Nadu has 27.60 cents. The fish eaters population is minimal to 27 percent in Tamil Nadu where the vast potential fish is traded to other states.¹⁸

OBJECTIVES OF THE STUDY

Over last few decades, there have been a rapid growth in the number of women employed in India with majority of them being engaged in informal sector of the economy where jobs are often low paid and repetitive. An effort has been made to reveal the socio-economic conditions of fisher women in the Pulicat village of the Tiruvallur district.

The study has the following objectives:

1. To examine the role of fishing sector in the development of fisher women in Tamil Nadu in the Indian context.
2. To portray the socio - economic conditions of fisher women living in the sample village.
3. To study the income, educational qualification, work participation between Male and Female , ownership, pattern of productive assets in the fisher women community.
4. To explain the factors determining the economic status and living condition of the local people.
5. To assess the effectiveness of Government policy and development programmes in ameliorating the socio economic condition of fisher women with special emphasis on 'women' section.

¹⁸ Ibid, p: 26

6. To point out the summary findings of the study as well as to suggest the fisher women community the measures for specific alternative strategy for development.

REVIEW OF LITERATURE

- The case studies titled *Successful Women Entrepreneurs in Aquaculture Sectors- Case Studies of Tamil Nadu, India (2012)* undertaken by **B. Shanti, M. Krishnan** and **A.G. Ponnaiah** for the Central Institute of Brackish Water Aquaculture (CIBA) and Indian Council of Agricultural Research (ICAR) proves the active engagement of women in aquaculture sectors while also enumerating the factors that contribute to the same besides bringing attention to the areas and opportunities in aquaculture where women participation can be increased and diversified.
- **D. Dhanuraj's** paper on *Conservation of Fishery Resources in Pulicat Lake (2006)* gives insight into the demographic background of Pulicat, nature of the traditional paadu system and its benefits, the scope of replicating such models to marine environments as well.
- The *Database on Coastal Information of Tamil Nadu (2008)* provided by **Prof. Dr. R. Ramesh, Dr. P. Nammalwar, Dr. (Mrs.) V.S. Gowri** as part of Tamil Nadu's ENVIS gives a brief account of the fisheries activities conducted in the regions surrounding Pulicat lake touching upon the traditional *paadu* system of fishing, crab and shrimp fishery and aquaculture and each of their contributions.
- The research paper on the *Need of Coastal Resource Management in Pulicat Lake- Challenges Ahead (2011)* by **N. Thirenavukharasu, S. Gokulakrishnan, P.R. Premjothi and R. Moses Inbaraj** focusses on the ecological and environmental effects of fisheries performed as an economic activity in the area, the need for ecological sensitisation and adoption of sustainable fishing practices among the local fisherfolk for sustained livelihood in the long run.
- The official website of the **Fisheries Department of Tamil Nadu** enumerates the various efforts in terms of training, infrastructural help and subsidies that it has undertaken to provide encouragement to the women SHG's in these areas.
- The brief report titled *CReNIEO Projects at Pulicat, Thiruvallur District, Tamil Nadu* provides a list of the various initiatives it has undertaken for the benefit of the fisherfolk in Pulicat with special emphasis on the Integrated Fisherfolk Development Project which later materialised into the Lake Women Advancement Project in 1990, for exclusive benefit of

fisherwomen in the area. It also provides a brief information about the various other NGO initiatives that have been rolled out in the area besides governmental efforts.

- **Meenakshi Gupta, (2016)** This book deals with pattern of employment of women, magnitude of problems faced by working women , laws pertaining to both International and National levels, case study of selected industries was undertaken to see the impact of labour laws on socio-legal status of women workers and the judicial responses to it. Although, the enormous conventions, recommendations and resolutions of UN and ILO have come as a boon to the working women which guarantees protection, medical care and maternity relief, but it remains only in papers.
- **Bina Agarwal, (2010)**, The author talks about the need for gender inclusive green governance for women's empowerment. She expresses that gender division of labour is the most important and an universal constraint. Men neither share household responsibilities nor the agriculture or cattle rearing tasks. It seriously restricts women's ability to participate in the inclusive programs meant for women.
- **Raghunandan, T.R, (2015)**, This is an edited essays on women's role. It discusses about some case studies of success stories and limitations of local government in rural areas. The revenues collected by panchayats in different states as a ratio of their state domestic products from the agriculture and allied activities have been discussed.
- **Indra Munshi, (2013)**, It examines how the British administration brought tribal land under their control and the loss of land and livelihood of Adivasi and made them dependent on their landlords for their survival. An article on the alienation of tribal lands in Tamil Nadu has been discussed. It describes about the conditions of the 33 Scheduled Tribes in Tamil Nadu.
- **Clarinda Still (2017)**, It gives rich account of individual Dalit women's lives and documents a rise in patriarchy in the community. Her work mainly focuses on Dalits in Andhra Pradesh. She discusses about how madiga dalit women have become empowered and an more influential leader of DWCRA, Savings and credit women's groups.
- **Suchitra S. Kumar, (2014)**, The author describes the status of women in India. She goes on to explain that women fare poorly, especially in rural areas because they receive little education and healthcare services in comparison to women. She states that patriarchy has led to a state where even if education is imparted to the girls, it is often of inferior quality. Parents were happy about the economic success of their sons than their daughters. It is an attempt to study the women's mobility under patriarchal system. She mentions that only the

urban population could apply to the formal sector, while the remaining unemployed are absorbed in the informal sector at subsistence level.

- **Prem Chowdhry, (2017)** It is a collection of essays, critically evaluated by social scientists on the existing state laws regarding ownership. The varied forms of gender discrimination that exist between and within regions, communities and caste groups. It examines the differences between legislations and customary laws related to inheritance of land in Tamil Nadu. It discusses about religions practiced in different communities from a gender perspective. It examines the government policies on revenue, agriculture and social welfare justice departments, The two major schemes of Tamil Nadu State Rural Livelihood Mission (TNSRLM) programs for women's development and rural livelihoods and the Mahalir Thittam for Self help groups (SHGs) introduced by through the Tamil Corporation for Development of Women for reducing poverty among women by empowering them in the socio-economic front.
- **Rekha R.Gaonkar, Maria D.C. Rodrigues and Patil R.B., (2015)**, It addresses on the issues confronting fishery sector, accumulation of capital in the hands of few, exploitation of marine resources, impact of mechanization of fishing.
- **Samitha Rani Natarajan, (2016)**, The author discusses though the percentage of working women seemed to be increasing with the increase in age, there were no the significant differences in the percentage of financial reasons.
- **Amita Saxena, (2011)**, The author has dealt a case study of fisheries sector in Tripura state. She has discussed about the impact of economic reforms and World Trade Organization implications in the fisheries.

RESEARCH METHODOLOGY

Keeping the objectives of the study in view, the primary source for research have been designed to collect with the help of interview schedule and structured questionnaire relating to size of the family, occupation, level of income, land holding, level of education, living conditions, health status, social contact, etc. Secondary sources of data have been designed to collect from the published books, journals and Internet to supplement the study. A pilot study was undertaken with simple random sampling method. Through lottery method 32 respondents representing the 52 villages have been selected for the purpose of the study. Before proceeding to the targeted community, much of the time was spent in the village, a meeting was organized by the Principal Investigator for the research study.

During the second year the principal investigator prepared an elaborate questionnaire schedule consisting of 65 questions. It consisted of various details such as the age, marital status, type of family, how many years of work experience, nature of their work, who assists in the profession, how much they earned each day, how many hours they worked each day, the type of challenges they faced in their profession, did they encounter accidents, how did they manage during ban period, what kind of alternate job they did during ban period, did they get the financial assistance from the government during the ban period, was it sufficient to run their family, did they save money, what was their saving pattern, Did they receive training from NGOs, Did they register as cooperative society members, did they join SHG, did they avail subsidies given by the government for installing GPS monitoring system in their vessel, what kind of help they expect from the government.

About 499 samples were collected from the 52 villages through lottery method. Through simple random sampling method about 10 samples were collected from each village. Researchers were able to interview the active fisher women who involved in marketing the post harvest catch directly. The role played by the active fisherwomen from the stage of unloading fishes from the boats to transporting the fishes to the auction centre and the entire process of selling the goods, storage of fishes, drying of fishes, retail selling were captured as a documentary by the researcher. The type of houses the fisher folk lived and family members were interviewed to understand the living conditions of fisherwomen of Pulicat.

An interactive section was also held with the participants to create awareness on the schemes and provisions available to safeguard for the interest of women in the field of economic activity by the Government. Interviews were conducted with the fisher women of the selected villages of Pulicat. The primary data was collected through systematic approach with the help of structured questionnaire schedule, interview method and observation method. The frequency analysis of the questionnaire samples were analysed and interpreted to infer the important findings with the help of statistician. The data visualization was done with the help of computer software specialists. The interpretation of the data are presented as Tables, charts and figures in the report.

The present research report is divided in the following six chapters:

Chapter I: Introduction

Chapter II: Women in Fisheries sector in India

Chapter III: Socio-Economic Status of Fisher Women of Pulicat Lake

Chapter IV: Data Analysis and Findings.

Chapter V : Evaluative study of Government Measures for Women Development

Chapter VI : Conclusions and suggestions.

THE SCENARIO IN TAMIL NADU:

Endowed with a rich reservoir of fishery resources from marine, inland and coastal aquaculture, Tamil Nadu is one among the country's top five fish producers. Both in terms of marine and inland fisheries the state's contribution is significant. The marine fisheries potential of the state is estimated to be at 0.719 million tones and the inland fisheries potential at 4.5 lakh metric tonnes. The resources for the latter comprises of reservoirs, rivers, seasonal tanks, upland waters, estuaries, brackish water areas, creeks, swamps etc. Ranking sixth among states involved in coastal farming, its potential for development lies with shrimp farming, fin fish farming, sea weed culture and other activities such as cage farming of fishes and crabs.

The Fisheries Department under the state government includes marine, inland, aquaculture, research, extension and training and fish harbour management. There are various objectives that the department functions upon which include encouraging fishermen to exploit the under-utilized fishery resources to reduce fishing pressure in the inshore areas, augmenting aquatic resource production in the inshore areas by conservation measures, stock enhancement and establishing of artificial reefs etc., along the coast, promoting sustainable eco-friendly fresh water aquaculture, coastal aquaculture and mariculture, strengthening the infrastructure facility for fish landing and marketing, uplifting the socio-economic condition of the fisher folk through welfare measures and by generating employment opportunities for fisher folk and enforcing regulatory measures through legislation for conservation of fishery resources both in Inland and Coastal waters.¹⁹

It is interesting to note that about 48.8% of the fisher folk population in the state are women and as per the 2016-17 data there are 460 Fisheries Co-operatives run by them with a membership of 2,50,276 women indicating a high level of women participation.²⁰ Success stories of women Self Help Groups (SHG's) in Tamil Nadu especially in terms of micro-credit serve as examples to fisherwomen communities world over.

¹⁹ <http://www.fisheries.tn.gov>

²⁰“ Fisheries at a Glance 2016-17”, <http://www.fisheries.tn.gov>

The Department of Fisheries conducts meetings among the women fisherfolk SHG in co-ordination with Tamil Nadu Women Development Corporation and local Non Governmental Organizations (NGO's). Training units under the department conduct programmes for these groups in association with the District Rural Development Agencies, Tamil Nadu Women Development Co-operations, Social Welfare Board, Tamil Co-operative Department, Tamil Nadu Veterinary and Agriculture Sciences (TANUVAS), Central Institute of Fisheries Nautical and Engineering Training (CIFNET), The Marine Products Export Development Authority (MPEDA), Investor Facilitation Portal (IFP) etc. Training is given on fish culture, integrated fish culture, ornamental fish culture, sea weed culture, lobster and crab fattening, value added fishery by-products, preparation of poultry feed, manure from waste prawn head, sea weed culture, culture of fishes, mussel and oyster culture, ornamental fish culture, mud crab and lobster fattening on a regular basis. Fish markets were handed over to these SHG's for management at Kancheepuram, Nagapatinam, Aranthangi and Thoothukudi. Also, solar fish driers were established and handed over to them to produce hygienically dried fishes at Punnakayal and Periathalai.²¹

FISHER WOMEN OF PULICAT LAKE

An attempt has been made to study the economic contributions of fisher women of Pulicat Lake to focus light on the problems and prospects of fisher women living in the Pulicat village of the Tiruvallur district in Tamil Nadu.

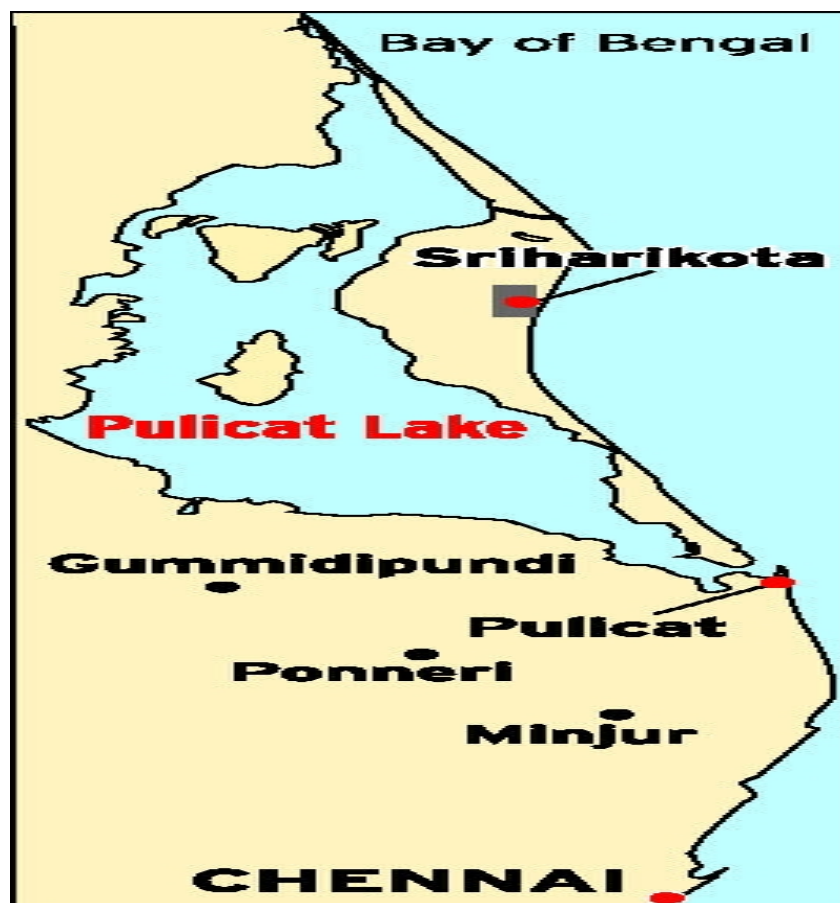
With about 52 fishing villages harbouring, the region is a prime area for fisheries and related economic activities in the state. People here are engaged both in inland and marine fisheries and more recently aquaculture. Most own their own catamaran or mechanised boats to perform the fishing activities. A special type of traditional system of inland fisheries known as the '*paadu*' is followed by the fishermen of certain specific communities in the area. This is a highly caste specific system where only the men (called as the *paatinavars*), who dwell in about 24 villages, are allowed to fish and is done in a systematic manner whereby all involved get an equal share of the resources.²²

Women on the contrary are actively engaged in the trading and processing of these. The presence of middlemen, though prevalent is found to be minimal. Apart from fishes, crabs are another important commercial resource exploited especially from the central part of the lake

²¹"Fisherwomen Self-Help Groups", <http://www.fisheries.tn.gov.in/selfhelpgroup.html>

²² Dhanuraj, D. "Conservation of Fisheries Resources in Pulicat Lake"(CPPR:2006)

with about 150 tonnes harvested per year. However, shrimp fishery constitutes the most important economic activity for the fisher folk community living around this lake with around 1232 kg of shrimps being captured every day. Aquaculture therefore, is a major activity post 1990 where the active participation especially of women has been observed even while their roles varied depending upon caste, religion and position in the family hierarchy. In a study conducted for CIBA and ICAR jointly, small scale aquaculture was found to augment fish production besides uplifting socio-economic conditions of women. The diagram provides the factors which promote women to take up these activities, the institutional and other help they receive and the socio-economic development and benefits gained in the process.²³



Source: Google map of Pulicat Lake

²³ B. Shanti et. al. "Successful Women Entrepreneurs in Aquaculture Sectors-Case Studies of Tamil Nadu"(Asian Fisheries Science Special Issue: 2012)

CHAPTER II

WOMEN IN FISHERIES SECTOR IN INDIA

The Constitution of India provides powers to Centre and States in regards to Agriculture development. Article 246 of the Constitution in Seventh Schedule, the Fisheries has been kept at serial no. 21 in List II-State List. While the fishing and fisheries beyond territorial waters has been kept at serial no. 57 in List I –Union List. Thus Agriculture including Animal Husbandry and Fisheries are considered as State subjects. Except Rajasthan, Meghalaya and Nagaland, all other States in India have separate Directorate of Fisheries. But the fisheries Department in these states are brought under Animal Husbandry. The National Commission on Agriculture has recommended that these departments should have technical Directors. It is observed that Tamil Nadu, Andhra Pradesh, West Bengal, Gujarat, Rajasthan are still having Generalist as Directors. It is observed that Gujarat, Jammu Kashmir, Himachal Pradesh, Maharashtra, Nagaland, Punjab and Rajasthan have a wide span of control. There are no intermediate post between Director, Deputy Director and Assistant Director. The Director has to monitor, guide, supervise, co-ordinate directly, the field staff which leads to adverse effect on the development of fisheries (Amita Saxena, 2011)¹.

FISHERIES SECTOR IN INDIA

Fisheries sector plays a key role in the Indian economy. It provides national income, exports, food and nutritional security and employment generation. It is considered as the main source of livelihood for the coastal communities. The contribution of Fisheries to the Gross Domestic Product (GDP) of the country is 0.91 percent. The per capita fish availability is 9.0 kg. The annual export savings Rs. 45,106.89 Crore and the employment generation in fisheries sector amounts to Rs. 14.0 million. India has a coastline of 8118 kms. The exclusive Economic Zone is 2.02 million sq. km. The brackish waters is 1.240 million hectare/year and estuaries is 0.290 million hectare/year. The present fish production capture is 7.0 million metric tonne (mmt) (National Fisheries Development Board). ²

The fisheries sector has been growing faster when compared to agricultural sector. This sector has been experiencing a boom and is contributing to the economic growth of the

¹ Amita Saxena, pp: 4-5

² <http://nfdb.gov.in/about-indian-fisheries.htm>

nation. About 6 million fishers are dependent on fisheries for their livelihood in India (Amita Saxena, 2011)³

ORIGIN AND DEVELOPMENT OF FISHERIES DEPARTMENT

Usage of fish by man is as old as man himself and use of fish in India dates back to Harappa and Mohanjadaro of Indus Valley civilization (2500 BC -1500 BC. Aristotle (384-327 BC) is said to be the founder of Fishery Science. **Akbarnama** indicates the system of catching fish in state waters In the Medieval Indian History. The British rule in India had a separate Department of Agriculture which included Fisheries at provincial levels. The Governor General of India passed the Indian Fisheries Act in 1897, the first Fisheries Department was established at Madras Province followed by Panjab in 1912. The Royal Commission on Agriculture was appointed in 1926⁴.

The Indian Council of Agriculture Research (ICAR) was established in 1929. A Fisheries Development Advisor was appointed in 1944. In 1946 Deep Sea Fishing Organisation was formed in Bombay to survey the Marine Fisheries Resources. Later a Marine Fisheries Research Institute at Mandapam, Rameshwaram and Inland Fisheries Research Institute was established in 1947. The **Central Marine Fisheries Research Institute**, (CMFRI) Chennai was established on 3rd February, 1947. As Tropical Marine Fisheries Research Institute and later joined ICAR family in 1961. The reorganization of the Department of Agriculture was initiated at the Central level for Planning, implementation and supervision with advisory functions. There are five Departments in the Ministry of Agriculture. Fishery is one of the Departments. The National Commission of Agriculture in 1976 recommended creation of new Departments like Crop Production, Animal Husbandry, Fisheries, Forestry etc under the Department of Fisheries there has to be a division of Marine and Inland Fisheries. It is headed by the Minister of Agriculture who is assisted by State Minister and the Secretary of State, two Additional Secretaries, Joint Secretary who are in-charge of Fishery Division.⁵

³ Amita Saxena," Fisheries Economics, Daya Publishing House, Astral International Pvt. Ltd., New Delhi, 2011, pp:62-63

⁴ Ibid, p:2

⁵ www.cmfri.org.in

THE INSTITUTIONAL FRAMEWORK

The Ministry of Agriculture of the Government of India has a department of Animal Husbandry, Dairying and Fisheries with a division of fisheries as a nodal agency. It is responsible for planning, monitoring and funding of central sponsored schemes. Most of the states have a separate Ministry of Fisheries or Ministry of Animal Husbandary. All states have a separate fisheries department with executives at district level and extension officers at block levels. Administrative varies from state to state. About 422 Fish Farmers Development Agencies (FFDAs) cover all the districts have the centrally sponsored schemes and 39 Brackish Fish Farm Development Agencies (BFDAs) in the maritime districts have been distributed to aquaculture development. The Indian Council of Agricultural Research which comes under Ministry of Agriculture has a division of fisheries which undertakes the Research and Development through number of Research institutes. There are about 400 Krishi Vigyan Kendras (Farm Science Centres) in the country which is operated through state agricultural universities. ICAR research institutes undertake aquaculture development. MPEDA under the Ministry of Commerce contributes export of aquaculture products (National Fisheries Department Board) ⁶.

THE RESEARCH INSTITUTES OF FISHERIES IN INDIA

These are headed by the Director General and Deputy Director General of Fisheries.

1. Central Institute of Fisheries, Nautical and Engineering Training, Cochin.
2. Pre-Investment Survey of Fishing Harbour, Bangalore.
3. Exploratory Fisheries Project, Bombay.
4. Central Marine Fisheries Research Institute, Cochin.
5. Central Institute of Fisheries Technology, Cochin.
6. Integrate Fisheries Project, Cochin
7. Central Institute of Fisheries Education, Mumbai.
8. Central Inland Fisheries Research Institute, Barakpore (West Bengal).

THE INDIAN COUNCIL OF AGRICULTURAL RESEARCH (ICAR)

(Ministry of Agriculture and Farmers Welfare) ⁷

⁶ <http://nfdb.gov.in>

⁷ <https://icar.org.in>

1. ICAR-Central Marine Fisheries Research Institute, Kochi, Kerala established in 1947
2. ICAR-Central Inland Fisheries Research Institute, Barakpore, West Bengal established in 1947.
3. ICAR-Central Institute of Fisheries Technology, Kochi, Kerala established in 1957.
4. ICAR-Central Institute of Fisheries Education, Mumbai, Maharashtra, established in 1961.
5. National Bureau of Fish Genetic Resources, Lucknow, Uttar Pradesh established in 1983.
6. ICAR-Central Institute of Fresh water Aquaculture, Bhuvaneshwar, Odisha established in 1987
7. ICAR-Directorate of Cold water Fisheries Research, Bhimtal, Uttarakhand established in 1987.

DIVISIONS AND UNITS

1. Crop Science
2. Horticulture Science
3. Natural Resource Management
4. Agriculture Engineering
5. Animal Science
6. Fisheries Science
7. Agriculture Education
8. Agriculture Extension
9. Knowledge Management
10. IP & TM and PME
11. Human Resource Management Unit
12. National Agriculture Science Fund (NASF)
13. Administration
14. Finance

CENTRAL GOVERNMENT FISHERIES SCHEMES

There are various schemes at the Central level which include

1. Development of Inland Fisheries and Aquaculture,
2. Development of Marine Fisheries,

3. Infrastructure and Post-Harvest Operations,
4. National Scheme for Welfare of Fishermen,
5. Strengthening of Database and GIS for fisheries sector,
6. Assistance to fisheries institutes,
7. National Fish Development Board (NFDB) and
8. Issuance of Biometric ID Cards to Coastal Fishermen.

The NFDB under the Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, is involved with the expansion of aquaculture in fresh and brackish water, development of marine fisheries infrastructure and post-harvest operations and also welfare of the fisher folk.

LAWS AND REGULATIONS FOR AQUACULTURE

1. Indian Fisheries Act (1897) attracts punishment for killing of fishes by poisoning of water or by using explosives.
2. Environment Protection Act (1986) deals with environmental issues
3. Water (Prevention and Control of Pollution Act (1974)
4. Wild Life Protection Act (1972)

On 11th December 1996, Supreme Court made a historic decision by prohibiting the construction of shrimp culture ponds within the Coastal Regulation Zone and within 1000 metres of Chilka lake and Pulicat Lake except improving traditional ponds (United Nations Food and Agriculture Organisation).⁸

INDIAN FISHERIES

Global position	3 rd in Fisheries 2 nd in Aquaculture
Contribution of Fisheries to GDP in (%)	0.91
Contribution to agriculture GDP in (%)	5.23
Per capita fish availability in (Kg)	9.0
Annual export earnings in Rs in (Crores)	45106.89
Employment in sector (million)	14.0

⁸ http://www.fao.org/fishery/countrysector/naso_india/en

RESOURCES

Coastline	8118 kms
Exclusive economic zone	2.02 million sq km
Continental shelf	0.530 million kms
Rivers and canals	1,95,210 km
Reservoirs	3,150 million hectares
Ponds and Tanks	2.414 million hectares
Flood Plains and derelict waters	0.798 million hectares
Brackish waters	1.240 million hectares
Estuaries	0.290 million hectares

SOME FACTS

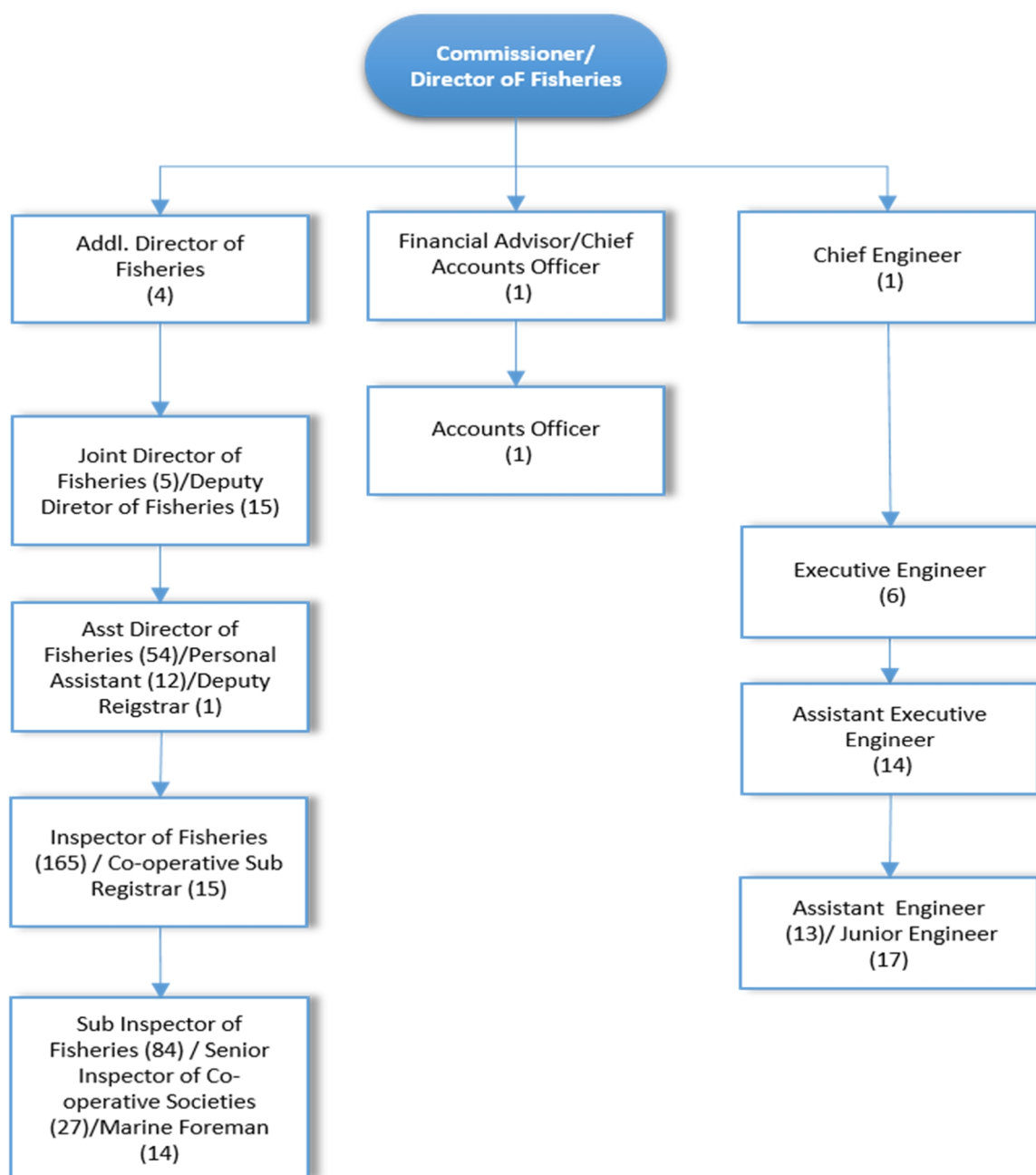
Present fish production (capture)	7.0 million metric tons (mmt)
Inland	3.2 mmt
Marine	3.8 mmt
Potential fish production	8.4 mmt
Fish seed production	40,000 million fry
Hatcheries	1,604 units
FFDA	429
BFDA	39

Source: <http://nfdb.gov.in/about-indian-fisheries.htm>

ADMINISTRATIVE SET UP OF TAMIL NADU FISHERIES DEPARTMENT

The Department is headed by the Commissioner/ Director of Fisheries. The Commissioner/ Director of Fisheries is also the Managing Director of Tamil Nadu Fisheries Development Corporation Limited (TNFDC Ltd.), the Functional Registrar of all Fishermen Cooperative Societies including Tamil Nadu State Apex Fisheries Co-operative Federation Ltd., (TAFCOFED) and the Member Secretary of Tamil Nadu Fishermen Welfare Board (TNFWB).

THE ORGANIZATIONAL SET UP OF THE DEPARTMENT



Source: <https://www.fisheries.tn.gov.in/AdministrativeSetup>

THE TOTAL STAFF STRENGTH OF FISHERIES DEPARTMENT IN TAMIL NADU IS 1684

CATEGORY WISE DETAILS

Sl No.	Designation	No.of Posts
1	Additional Director of Fisheries	04
2.	Joint Director of Fisheries	05
3.	Deputy Director of Fisheries	13
4.	Financial Advisor & Chief Accounts Officer	01
5.	Deputy Director Personnel	01
6.	Deputy Director (Engg)	01
7.	Assistant Director of Fisheries	54
8.	Personnel Assistant	12
9.	Deputy Registrar	01
10.	Accounts Officer	01
11.	Inspector of Fisheries	165
12.	Cooperative Sub Registrar	15
13.	Marine Foreman	14
16.	Sub-Inspector of Fisheries	84
17.	Senior Inspector of Cooperative Societies	27
18.	Fishery Assistant	168
19.	Ministerial & Field Staff	1018
	TOTAL	1584

Source: <https://www.fisheries.tn.gov.in/AdministrativeSetup>

ENGINEERING WING

Sl No.	Designation	No. of Posts
1.	Chief Engineer	01
2.	Executive Engineer	06
3.	Assistant Executive	14
4.	Assistant Engineer	13
5.	Junior Engineer	17
6.	Senior Draughting Officer	01
7.	Draughting Officer	08
8.	Junior Draughting Officer	04
9.	Divisional Accountant	04
10.	Technical Assistant	23
11.	Ministerial and Supporting Staff	09
	TOTAL	100

Source: <https://www.fisheries.tn.gov.in/AdministrativeSetup>

FISHERIES AT A GLANCE 2015-2016-MARINE STATISTICS

	Items	Value
1	Coastal Length	1076 Kms.
	India	8118 Km
2	Continental Shelf	41412 sq.kms.
3	No. of Coastal Districts	13
4	Marine Fishing Villages	608
5	Infrastructure facilities	
	a) Marine Fishing Harbours	11
	b) Marine Fish Landing Centres	36
	c) Marine Fish Landing points	254
6	Fisher-folk Population (as per census 2010)	787474
	Fisher –folk Population (projected 2016)	
	(a) Women	471936
	(b) Men	492835
	Total	964771
7	Registered Fishing Craft (in Nos)	
	a) Mechanised Boats	5887
	b) Non-Motorized	5249
	c) Motorised	28675
	Total	39811
8	Fisheries Co-operatives	
	(a) Primary:	
	(i) Men FCS	530
	(ii) Women FCS	438
	b) District Federation	8
	c) State (APEX) TAFCOFED	1
9	Membership	
	a) Men-FCS	3,55,451
	b) Women-FCS	2,43,359
	Total	5,98,810
	c) District Federation	859
	d) State Federation (TAFCOFED)	785
10	Marine Fish Production (in tonnes)	466604.032
11	Marine Products Export (2015-16)	
	a) Quantity (in tonnes)	85,063
	b) Value (Rs. in Crore)	4184.06
12	Fishermen Group Accident Insurance:	
	a) Members Enrolled (2015-16)	7,16,284
	b) Families benefited (2015-16)	133
	c) Relief Amount Paid in Rs. In Lakhs	11750
13	a. Fishermen's Savings cum Relief Scheme	
	(i) Men	204828
	(ii) Women	192040
	b. Relief amount paid in Rs. in crores	7143
14.	TN Fishermen Welfare Board	
	a) Number of members enrolled	438070

b) Number of beneficiaries	44629
c) Relief assistance in Rs. In crores	19.79

Source: <http://fisheries.tn.gov.in>

INLAND STATISTICS

Sl No.	Items	Value		
1.	Inland Fishery Resources (in Hectares)			
	a) Reservoirs	62015.06		
	b) Brackish water Area	56000		
	c) Others	265819		
	d) Total	383834.06		
2.	No of District Fish Farmers' Development Agencies	31		
		Dep	TNFDC	Total
3.	No of Reservoirs	53	8	61
4.	Induced Carp Spawning Centres	8	-	8
5.	Fish Seed Rearing Centres	34	-	34
6.	Fisher-folk Population (Projected)for 2015 -16	228040		
7.	Fisheries Co-operative	No. of societies		
	a)Primary			
	i) Men-FCS	297		
	ii) Women-FCS	68		
	b) District Federation	3		
8.	a)Membership : Primary			
	i) Men-FCS	87207		
	ii) Women-FCS	7758		
	(b) District Federation	133		
	(c) State Federation (TAFCOFED)			
9.	Fish seed production (in Lakhs)	Target	Achievement	
	a) By Induced Breeding(Early Fry)	4810	4131.30	
10.	Fish seed rearing(in lakhs)	Target	Achievement	
	Late Fry	452	329.77	
	Fingerlings	1141.5	576.115	
11.	Advanced Fingerlings			
12.	Fish Production for (2015-16) (in Lakh tonnes)	242		
	Achievement			

Source: <http://fisheries.tn.gov.in>

STATUS OF FISHER WOMEN IN INDIA

Women hold the key position in their families and influence the general development of the family through their work participation, extending financial support to family more specifically, in fisher women households. According to a recent Human Development Report of UNDP, 70% of the people living in poverty are women. This is because women face a whole series of complex cultural, social, traditional, economic and legal constraints that even

poor men do not face. They have far less opportunities than men to get education and training and therefore possess very few skills necessary for today's world. There appears to be a definite feminization of poverty. When a community as a whole is poor and downtrodden, the women folk in the community have to bear the brunt of it all the more.⁹(Bisoyi, 2005).

It has been proved in the earlier studies that the husbands of fisherwomen are not working either due to oldage or alchoholism.¹⁰

Fisherwomen buy fishes from wholesale or retail for the reasons like less catch. Every single day, fisherwomen start their work very early in the morning. They work for more than 8 to 11 hours a day. Women had to wait for the return of boats. Then they participate in a competitive auction. Whenever the catch is less, there will be greater demand. The person who can make the highest bid will purchase and later on sell it for a good price. In fisher women's family the responsibility of household management like food, childcare, education, health, sanitation, financial management and the responsibility of getting and repaying loans will be mostly on the women's shoulders. The burden of her responsibilities doubles in the off-season. Besides, in many places women are running petty shops, selling different inputs needed for fishing and other household articles. Mobile food selling units run by women in landing centres serve the purpose of supplying breakfast and snacks to fishermen. The Fisheries sector is recognized as one of the most economically depressed sector in society. They are often depicted as:

1. Overworked, with their contribution unrecognized, unvalued or undervalued.
2. Lowly – paid and exploited by employees.
3. Illiterate
4. Undernourished and sickly with poor productivity
5. Lacking opportunities for skills upgrading and access to training. (Bisoyi& Tanuj, 2005)¹¹

ECONOMIC CONTRIBUTIONS OF FISHER WOMEN IN INDIA

Fisherwomen play a significant role in general livelihood of fishermen family. They not only maintain all day to day family and domestic activities, but also contribute

⁹ Bisoyi p: 8

¹⁰ Rekha R.Gaokar, Maria D.C. Rodrigues and Patil R.B, "Fishery Management", A.P.H. Publishing Corporation, New Delhi, 2015, p: 66.

¹¹Bisoyi, Tanuj Kumar, "Women in Fishery", Mohit Publications, New Delhi, 2005, pp:3-8

significantly towards the most of fisheries and aquaculture activities. Thus role of women, their contribution towards the development of the society is not scanty, at all.¹² (Samanta, R.K. (Ed). 2005). But, women are systematically excluded from profitable sectors of fishery and marine related activities. Therefore unequal power relations and access to resources has let to continuing poverty of the coastal communities.¹³ Moreover, the economic reforms of Liberalization, Privatization and Globalization (LPG) did not include any specific package for agriculture. With a contribution of 5.15% towards agricultural GDP of India alone, the prospects of fisheries for the rural people are immense. It also employs over 14 million people in the sector. While traditionally the role of women in this sector was mostly restricted to post harvest activities like processing and marketing and was considered marginal, nowadays their role as active participants is being recognised. The scope of activities for women in this arena include transportation of fish, sales of fish and dry fish, fish cleaning, drying, fish feed development, ornamental fish culture, fin-fish culture, crab fattening in cages and pens, shrimp processing, shrimp, crab and fish farming and hatchery management, development of value-added fish products, aquaculture by-products business, sea weed culture and drying etc. The income generated is added as a supplementary income to support their families. However, there are various impediments in ensuring the economic development of the women engaged in this sector which includes illiteracy, lack of awareness of governmental schemes, social taboos and conservative norms, income disparities and other inequalities arising out of unattended gender disparities and should become the focus of addressing the development of these communities.

Fisherwomen who are financially stronger are the beneficiaries. If the catch is more then, the poorer sections also participate in the market. There is a class hierarchy that is formed over the years of experience among the fisherwomen who have their own men folk in the boat or their own husbands who have brought the catch. In the middle of the hierarchy there are women who purchase fish from the first category of women and sell it in the market. In the last rung are women who purchase small shares from other sources. More number of women buy fish in the retail sale ranging from Rs 500 to Rs 2000. It implies that most of the fisher women are small scale fish vendors. Then the fisherwomen have to transport the fish

¹² Samanta, R.K. (Ed.). "Empowering Rural Women : Issues, Opportunities and Approaches, The Women Press, Delhi 2005, p:166).

¹³ Subhadra Mitra Channa and Marilyn Porter. "Gender, Livelihood and Environment", Orient Blackswan Private Limited, New Delhi, 2015, p: 95.

and sell in the market. They use ice to preserve the fish. They spend many hours in selling the fish and there is lot of fish which is spoilt due to lack of proper storage facilities. Majority of the fisherwomen spend 8-12 hours per day on procuring and selling the fish.¹⁴

FISHERIES IN TAMIL NADU

Endowed with a rich reservoir of fishery resources from marine, inland and coastal aquaculture, Tamil Nadu is one among the country's top five fish producers. Both in terms of marine and inland fisheries the state's contribution is significant. The marine fisheries potential of the state is estimated to be at 0.719 million tonnes, the inland fisheries potential at 4.5 lakh metric tonnes. The resources for the latter comprises of reservoirs, rivers, seasonal tanks, upland waters, estuaries, brackish water areas, creeks, swamps etc. Ranking sixth among states involved in coastal farming, its potential for development lies with shrimp farming, fin fish farming, sea weed culture and other activities such as cage farming of fishes and crabs.

The Fisheries Department under the Tamil Nadu government includes marine, inland, aquaculture, research, extension and training and fish harbour management. There are various objectives that the department functions upon which include encouraging fishermen to exploit the under-utilized fishery resources to reduce fishing pressure in the inshore areas, augmenting aquatic resource production in the inshore areas by conservation measures, stock enhancement and establishing of artificial reefs etc., along the coast, promoting sustainable eco-friendly fresh water aquaculture, coastal aquaculture and mariculture, strengthening the infrastructure facility for fish landing and marketing, uplifting the socio-economic condition of the fisher folk through welfare measures and by generating employment opportunities for fisher folk and enforcing regulatory measures through legislation for conservation of fishery resources both in Inland and Coastal waters.¹⁵

With the advent of Blue Revolution and its revamped version, today the fisheries sector in India constitutes about 6.3% of the global fish production making it the world's third largest producer of the same. The contributions of aquaculture having earned the tag of being the 'second largest producer' globally forms the major chunk of this consistent achievement with an overall projected growth rate of 6% as per the Twelfth Five Year Plan. With about 2200 species of fish – warm fresh water (24.7%), cold water (3.3%), estuaries

¹⁴ Ibid, pp: 67-71.

¹⁵ <http://www.fisheries.tn.gov>

(6.5%) and sea (65.5%) the vast and rich diversity available for sustainable utilisation is immense. The contribution of this sector to GDP is estimated to be at about 1.07% with annual export earnings alone contributing to about 33,441.61 crores.¹⁶ However, while aquaculture has been trying to meet the increasing demands by also incorporating culture based capture fisheries, the production levels of marine fisheries seems to be dwindling over the years owing to overexploitation and having reached the maximum sustainable goals besides lack of better technological innovations and management paradigms focus on achieving sustainable livelihoods.

FISHER WOMEN IN TAMIL NADU

The total fisher population in Tamil Nadu has 27.60 cents. The fish eaters population is minimal to 27 percent in Tamil Nadu where the vast potential fish is traded to other states.¹⁷ It is interesting to note that about 48.8% of the fisher folk population in the state are women and as per the 2016-17 data there are 460 Fisheries Co-operatives run by them with a membership of 2,50,276 women indicating a high level of women participation.¹⁸ Success stories of women SHG's in Tamil Nadu especially in terms of micro-credit serve as best examples to fisherwomen world over. The Department of Fisheries conducts meetings among the women fisherfolk SHG in co-ordination with Tamil Nadu Women Development Corporation and local NGO's.

The Fishery Department conducts various programmes for these SHGs in association with the District Rural Development Agencies, Tamil Nadu Women Development Co-operations, Social Welfare Board, Tamil Co-operative Department, TANUVAS, CIFNET, MPEDA, IFP etc. Training is given on fish culture, integrated fish culture, ornamental fish culture, sea weed culture, lobster and crab fattening, value added fishery by-products, preparation of poultry feed, manure from waste prawn head, sea weed culture, culture of fishes, mussel and oyster culture, ornamental fish culture, mud crab and lobster fattening on a regular basis. Fish markets were handed over to these SHG's for management at Kancheepuram, Nagapatinam, Aranthangi and Thoothukudi. Also, solar fish driers were

¹⁶ “Annual Report 2016-17”, Department of Animal Husbandry, Dairying and Fisheries, <http://www.dahd.nic.in>

¹⁷ Ibid, p: 26

¹⁸“ Fisheries at a Glance 2016-17”, <http://www.fisheries.tn.gov>

established and handed over to them to produce hygienically dried fishes at Punnakayal and Periathalai.¹⁹

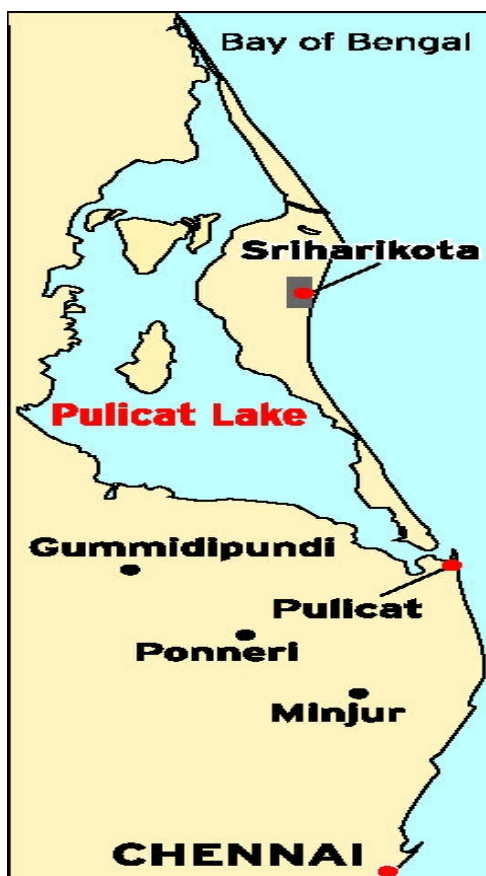
In Tamil Nadu, women engage themselves in seaweed collection in addition to the traditional jobs of fish curing, marketing, net making and prawn seed collection. Aquaculture activities can be pursued by the rural women folk at convenient leisure time without being a detriment to their routine. More effort is to be put towards filling the gaps in programme planning rather than programme implementation. The various issues challenging empowerment of fisherwomen have to be seriously taken into consideration while chalking out new development strategies. Women empowerment and thereby the community development through combined efforts of men and womenfolk requires a holistic approach.

¹⁹“Fisherwomen Self-Help Groups”, <http://www.fisheries.tn.gov.in/selfhelpgroup.html>

CHAPTER III

SOCIO-ECONOMIC STATUS OF FISHER WOMEN OF PULICAT LAKE

Pulicat or Pazhaverkadu in Tamil which means plants with many roots or Forest of rooted fruits (ie) mangroves which are salt tolerant plants.. its origin is 6650 years old belonging to the Holocene geological period as major marine transgression to low lying coastal marsh. ¹ The Pulicat is a narrow region of the lake measuring about 250 m. Pulicat comes under Minjur block, Thiruvallur District of Tamil Nadu, South India. It is about 60 Km north of Chennai the State capital and 3Km from Elavur on the southern periphery of the Pulicat Lake. Basically Pulicat is a shallow salt water lagoon with depth of about minimum 1.5 m and maximum depth varies from 0,5 to 6,0 respectively.



SOURCE: GOOGLE MAP OF PULICAT LAKE

¹ Sanjeeva Raj, P.J., 2006, Macro Fauna of Pulicat Lake, National Biodiversity Authority, Chennai, Tamil Nadu, India, pp:63-65..

Pulicat lake is the 2nd largest brackish water lagoon in India after Chilika lake measuring 759 Km. it attracts North Eastern monsoon rain clouds during October-December season in Tamil Nadu. Pulicat is 20 Km distance from sub-district head quarters Ponneri, Thiruvallur. The lagoon cuts across in the middle of Sriharicita Link Road which divides the water body into the lake from the Bay of Bengal being separated from it by a broad sand strip called the Sriharikota Island which is located in Sriharikota High Altitude Range (SHAR) of the Indian Space Research Organization (ISRO) and the major part of the lake comes under Nellore District of Andhra Pradesh. There are three mouths located at Tupilipalem, Rayadoruvu, and Pulicat lake. Through which the lake connects to the sea.² There are two large inhabited islands Venadu and Irukkam in the northern region of the lake in Andhra Pradesh. The vast marsh land around the lake becomes an ideal feeding ground for migratory birds which forms sea weeds and seagrass. The source of fresh water is through Arani-southern part of the lake, Kalangi-western part and Swarnamuki-northern part of the lake.³

The Pulicat lake is the second largest Brackish water lagoon in India next to Chilka lake in Orissa. Pulicat lake has rich natural resources with diverse flora and fauna which supports fishing. It sustains rich biodiversity of fin fishes, shell fishes, crustaceans, benthic fauna and planktons.⁴ The fauna of the lake consists of fishes, molluscs, prawn and crabs. The lake attracts 15,000 flemingos, , 80-100 water birds every winter from Ladakh, Tibet and China. Some have become threatened species.

There are about 52 villages surrounding Pulicat coastal lake. The people dwelling in these villages depend on the lake for their livelihood. Fisher men use net fishing in Pulicat lake. The Padu Systems or Net Fishing is a traditional system of granting settlements to eligible members of a particular community for undertaking fishing activities in the lake.⁵ In this system individuals are allotted a particular area of operation inside the lake and duration of their activity is restricted. This provides equal share of resources of the lake.. During summer

² Nagarjuna, A., Nandakumar, N.V., Kalarani, V., and Reddy, D.C., 2010, Aquatic and avian biodiversity of Pulicat brackish water lake and ecological degradation, World Journal of Fish and Marine sciences, 2(2), pp: 118-123.

³ Nanda Kumar, N.V., 2000, Impact of brackish water aquaculture effluent on coastal wetland ecology on avifauna of Pulicat lake., Technical report submitted to the World Bank through Department of Forest, Government of Andhra Pradesh.

⁴ Kathirvel, M., 2003, Bibliography on fisheries, biology of lake Pulicat, published by the Fisheries Technocrat Forum, Chennai, Tamil Nadu, p: 20.

⁵ Mathew, 1991., Study of territorial use rights in small scale fisheries. Traditional systems of fishery management in Pulicat lake, Tamil Nadu, India, Food and Agriculture Organization, Fisheries Circular, p:839.

seasons prawn catches are low whereas in monsoon the yield of prawn is high.⁶ The Global Nature Fund has nominated Pulicat as the Threatened Lake of the Year, 2010. The World Wide Fund for Nature (WWF) declared Pulicat as a protected area. The entire pulicat water system including lagoon, Ennore and the Buckingham canal is designated as zone 1⁷

The Pulicat Lake in Tamil Nadu has a historical background. It is said that Arabs migrated in 13th century for refusing to pay tribute to the then Califs. Masonry houses occupied by the Arabian Muslims are still found testifying the migration. Portuguese colonized in 16th century followed by the Dutch. Pulicat is a tourist attraction known for its brackish water where the lake is separated from the Bay of Bengal by a small strip of land which comprises of the Pulicat town. The Dutch built a fort in 1609 as it faces the Coromandel coast. It was later occupied by the British in 1825. After India's independence, the Fort Geldria dating to 1609, a church, a cemetery with tombs constructed by the Dutch is under the Archaeological Survey of India (ASI). The Dutch had business with the British East India Company and other countries in the area. It was known as Pallaicatta and later came under Madras which was renamed as Tamil Nadu. At present the Dutch cemetery is under the Archaeological Survey of India. There are several small islands of fishing settlements such as Sriharikota, Pulicat, Dugaraju patnam and Sullurpeta.⁸

The salt water lagoon is preserved by the Wild Life Sanctuary due to its rich heritage and biodiversity. Pulicat Lake has become a tourist attraction where people from all over the world visit the terrestrial birds sanctuary, Dutch cemetery, boating, light house, aquatic fishes, mammals, reptiles, migratory birds such as flemingoes, spot billed pelicans, kingfishers, painted storks, spoon bills, ducks and seven species of herons, egerets, 20 species of shorebirds, gulls, terns, little grebe, Indian cormorant, little cormorant, Asian open bill stork, black headed ibis, Eurasian spoon bill, lesser whistling teal, spotbill duck, grat thick knee and stone curlew which visits every year. Several wintering water fowl have been found including bar headed goose, ruddy sheduck, Eurasian wigeon, common teal, northern pin tail, garganey, northern shoveller, common pochard, brown headed gull, black headed gull, whiskered tern and Caspian tern. White belled sea eagle, harriers and peregrine falcons

⁶ Coulthard, S., 2006, Developing a people centered approach to the coastal management of Pulicat lake a threatened coastal wetland in South India, PhD Thesis, Department of Economics and International Development, University of Bath, United Kingdom.

⁷ Ibid Sanjeev Raj., 2006 p:1.

⁸ <http://en.m.wikipedia.org>

appear in winter. It is estimated that about 15,000 birds migratory birds visit Pulicat every year.



DUTCH CEMETRY ENTRANCE



DUTCH TOMB



LIGHT HOUSE KUPPAM, PULICAT LAKE



PALM TREES AT PULICAT ISLANDS



FISHER MEN AT PULICAT LAKE



FISHING BOATS, PULICAT LAKE



MIGRATING BIRDS, PULICAT BIRD SANCTUARY, LAKE





PAINTED STORK, PULICAT



SPOT BILLED PELICAN, PULICAT LAKE



ASIAN OPEN BILLED STORK, PULICAT LAKE



BIRD SANCTUARY, PULICAT LAKE



FISHER WOMEN OF PULICAT

The 2011 census of India, the total population of Pulicat is 17925 and there are about 4619 houses. The total female population is 50.3% (9010) and the literacy rate is 66.8% (11970). The female literacy rate is 31.5% (5650). The Schedule Tribe population is 6.2% (1116) and the Schedule Caste population is 13.4% (2393). The working population is 36.6%. The girl children population between the age group of 0-6 years is 47.2%. A holistic rural development implies economic betterment of the people as well as greater social transformation. Therefore it becomes imperative that increased people's participation, both directly and indirectly, must be ensured in programmes meant for their development, upliftment and empowerment. In this regard the role of women in enabling the same becomes essential. Constituting around 48.5% of the total population in India, women form one-third of the nation's labour force and thus socio-economic empowerment becomes a critical aspect when it comes to addressing the economic development of this segment.

With a contribution of 5.15% towards agricultural GDP of India alone, the prospects of fisheries for the rural people are immense given that it also employs over 14 million people in the sector. While traditionally the role of women in this sector was mostly restricted to post

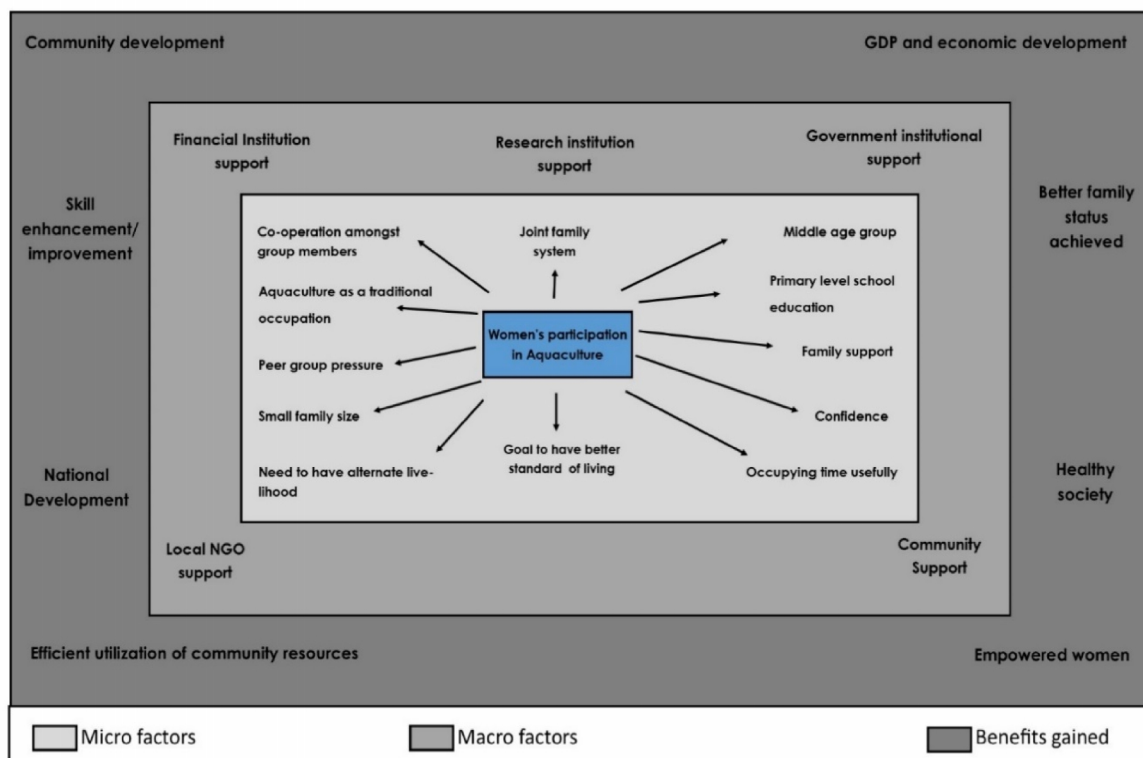
harvest activities like processing and marketing and was considered marginal, nowadays their role as active participants is being recognized more importantly. The scope of activities for women in this arena include transportation of fish, sales of fish and dry fish, fish cleaning, drying, fish feed development, ornamental fish culture, fin-fish culture, crab fattening in cages and pens, shrimp processing, shrimp, crab and fish farming and hatchery management, development of value-added fish products, aquaculture by-products business, sea weed culture and drying etc. The income thus generated becomes a supplementary income to support their families. However, there are various impediments in ensuring the empowered economic development of the women engaged in this sector which includes illiteracy, lack of awareness of governmental schemes, social taboos and conservative norms, income disparities and other inequalities arising out of unattended gender disparities and these especially the latter should become the focus of addressing the development of these communities.

With the advent of Blue Revolution and its revamped version, today the fisheries sector in India constitutes about 6.3% of the global fish production making it the world's third largest producer of the same. The contributions of aquaculture having earned the tag of being the 'second largest producer' globally forms the major chunk of this consistent achievement with an overall projected growth rate of 6% as per the Twelfth Five Year Plan. With about 2200 species of fish – warm fresh water (24.7%), cold water (3.3%), estuaries (6.5%) and sea (65.5%) the vast and rich diversity available for sustainable utilization is immense. The contribution of this sector to GDP is estimated to be at about 1.07% with annual export earnings alone contributing to about 33,441.61 crores.⁹ However, while aquaculture has been trying to meet the increasing demands by also incorporating culture based capture fisheries, the production levels of marine fisheries seems to be dwindling over the years owing to overexploitation and having reached the maximum sustainable goals besides lack of better technological innovations and management paradigms focussing on achieving sustainable livelihoods.

Understanding the importance of the sector, there are various schemes in place at the Central level which include Development of Inland Fisheries and Aquaculture, Development of Marine Fisheries, Infrastructure and Post-Harvest Operations, National Scheme for Welfare of Fishermen, Strengthening of Database and GIS for fisheries sector, Assistance to fisheries

⁹ "Annual Report 2016-17", Department of Animal Husbandry, Dairying and Fisheries, <http://www.dahd.nic.in>

institutes, NFDB and Issuance of Biometric ID Cards to Coastal Fishermen. The National Fish Development Board (NFDB) under the Department of Animal Husbandry, Dairying and Fisheries, Ministry of Agriculture, is involved with the expansion of aquaculture in fresh and brackish water, development of marine fisheries infrastructure and post-harvest operations and also welfare of the fisher folk. Apart from fishes, crabs are another important commercial resource exploited especially from the central part of the lake with about 150 tonnes harvested per year. However, shrimp fishery constitutes the most important economic activity for the fisher folk community living around this lake with around 1232 kg of shrimps being captured every day. Aquaculture therefore, is a major activity post 1990 where the active participation especially of women has been observed even while their roles varied depending upon caste, religion and position in the family hierarchy.





SHRIMP CATCHER WOMEN OF RAJARATHNAM KUPPAM OF PULICAT



In a study conducted for CIBA and ICAR jointly, small scale aquaculture was found to augment fish production besides uplifting socio-economic conditions of women. The diagram given above gives a brief on their findings which help in understanding the factors which

promote women to take up these activities, the institutional and other help they receive for the same and the socio-economic development and benefits gained in the process.¹⁰

General Government and NGO's Initiatives prevalent in the area:

The Thiruvallur District of which the Pulicat village is a part of, has initiated several measures for the upliftment of the fisher folk community in these areas under both Central and State schemes some of which include the Fisheries Development Mission Programme, the Fish Farmers Development Agency, subsidies released by the BFDA, AGAMT, training programmes conducted for the Tsunami affected coastal villages under Swaranajayanti Gram Swarozgar Yojana, funds provided to renovate the existing prawn and fish farms or to construct new ones under NFDB besides conducting a three day training programme- Reservoir Fishery Management. Besides, the Department of Science and Technology has also been involved with imparting technical skills to the fisher folk dwelling in these areas- Technical Training Programme for 120 fisher folk boys for repair and maintenance of outboard motor engines, Computer Operations Course for fisher folk and SC students and other programmes related to integrated farming and betterment of socio-economic conditions for SC women exclusively. The Tamil Nadu Fisheries Department had drier and pulveriser machines worth Rs. 8 lakhs established at Pulicat for the benefit of fisherwomen SHG's after imparting training to them to operate the machines and prepare chicken and fish feed.

Along with the government, the role of NGO's in bringing about the upliftment of fisherwomen and a holistic development of the fishing community is also commendable. Agencies like CReNIEO, SCINDeA and WF-UK have had projects catering to women's health, sanitation, leadership, non-formal education, skill development, environmental awareness and Eco restoration.¹¹ Capacity building for women SHG's and micro-enterprising are other main areas of focus. Most of these programs have therefore, tried to bring about sustainable livelihoods for this community.

ISSUES THAT PREVAIL AS A CAUSE OF CONCERN:

The silting of the river mouths leading to its close is proving detrimental to the fishfolk as it is affecting the catch negatively. That the government has not taken any steps to desilt the lake is causing much unrest and furore amongst these communities. Besides certain

¹⁰ B. Shanti et. al. "Successful Women Entrepreneurs in Aquaculture Sectors-Case Studies of Tamil Nadu"(Asian Fisheries Science Special Issue: 2012)

¹¹ CReNIEO Projects in Pulicat Lake, Thiruvallur District, Tamil Nadu

unscientific practices are also proving to be problematic to the environment and ecosystem making themselves vulnerable again. Lack of adequate technological upgradation as regards fishing techniques and equipment, are another concern as the competition with the marine fishermen are increasing and eventually the traditional practisers are losing out. Despite earning hardly Rs.200-300, these traditional fisherfolk cannot imagine leaving this occupation as they believe it is the only thing that they are familiar with and skilled in.¹²

¹² “In Harms Way: Pulicat Lagoon”, <http://www.indiawaterportal.org/articles/harms-way-pulicat-lagoon>

CHAPTER IV

DATA ANALYSIS AND FINDINGS

Women play a vital role in post-harvest fisheries, in sorting, processing, curing and marketing of fish on a small scale level, whereas the men's role is limited to their involvement in fishing. Besides this, the innumerable production activities carried out mainly by women within the household sector are of critical importance for the society's survival, growth and development. Household production is essential for providing the calories that produce energy with which to work in any sector of the economy. The level of any individual's health is largely determined by the household ability to produce basic levels of shelter and food.

During the last two decades women are increasingly involved in fish farming in India. They are engaged in composite fish culture, farming of shrimps, integrated farming of fish, horticulture, poultry and animal husbandry, rearing of ornamental fish and rearing of mud crabs. They manage all the activities with the help of advanced aquaculture technologies. Women collect shrimp and fish larvae from natural water bodies and also take up production of fish seed in backyard hatcheries and on-farm production of fish and shrimp feed.

Women handle a wide range of post harvest activities which include sorting, icing, auctioning, packaging selling, management of fish stalls, fish vender and door-to-door selling. Small scale processing activities sun drying, curing, smoking preparation and pickling are also taken up by women. Although, the number of women engaged in post harvest operations are high, the per capita income generated is low and the participation of women is often due to economic compulsions. Quality of fish processing and products have to meet high standards and women play a major role in attaining the objectives.

ECONOMIC CONTRIBUTIONS OF FISHERWOMEN IN MARINE SECTOR

Women's role as a homemaker, though supportive, is indispensable for the men to go for fishing. Activities like cooking, childcare, children's education, family health and sanitation are almost exclusively looked after by women. The burden of her responsibilities doubles in the off-season. Besides, in many places women manage petty shop, sell different inputs needed for fishing and

other household articles. Mobile food selling units run by women in landing centres serve the purpose of supplying breakfast and snacks to fishermen.

Besides attending routine family chores, coastal women also support the fisheries sector through their involvement in small-scale fisheries operations such as net making, fish culture, fish pre-processing, processing and marketing. The nature of contribution varies with the geographical area, resource availability, type of technology, infrastructure, access to processing activities, marketing pattern, rural-urban settings and social factors. Women's role in coastal resource management has become more pronounced with the increasing number of female-headed households. In Tamil Nadu, women engage themselves in seaweed collection in addition to the traditional jobs of fish curing, marketing, net making and prawn seed collection. Aquaculture activities can be pursued by the rural women folk at convenient leisure time without being a detriment to their routine.

Women's participation has not yet been successful. More effort is to be put towards filling the gaps in programme planning rather than programme implementation. The various issues challenging empowerment of fisherwomen have to be seriously taken into consideration while chalking out new development strategies. Women empowerment and thereby the community development through combined efforts of men and womenfolk requires a holistic approach. As Amartya Sen (2001) has rightly observed "there are no good reasons to abandon the understanding that the impact of women empowerment in enhancing the voice and influence of women does help to reduce gender subjugation of women." Fisheries play an outstanding role in India's economy. It augments food supply, generate employment, raise nutritional levels and finally enhances foreign exchange position through acceleration of exports. Women play a vital role in the production, processing and marketing of fish. (Bisoyi, 2005)¹. This chapter analyses the socio-economic features of fisher women folk living in the Pulicat village of Tiruvallur district in Tamil Nadu on the basis of field data collected through questionnaire method 500 samples were randomly selected and the general findings were tabulated from the survey. In a male dominated society, the status of women is determined by the status of men in the family. A married woman's status is determined by the status of her husband. Marital status of the women respondents has been explicitly presented in Table 4.1.

¹ Bisoyi, 2005, pp: 68-103

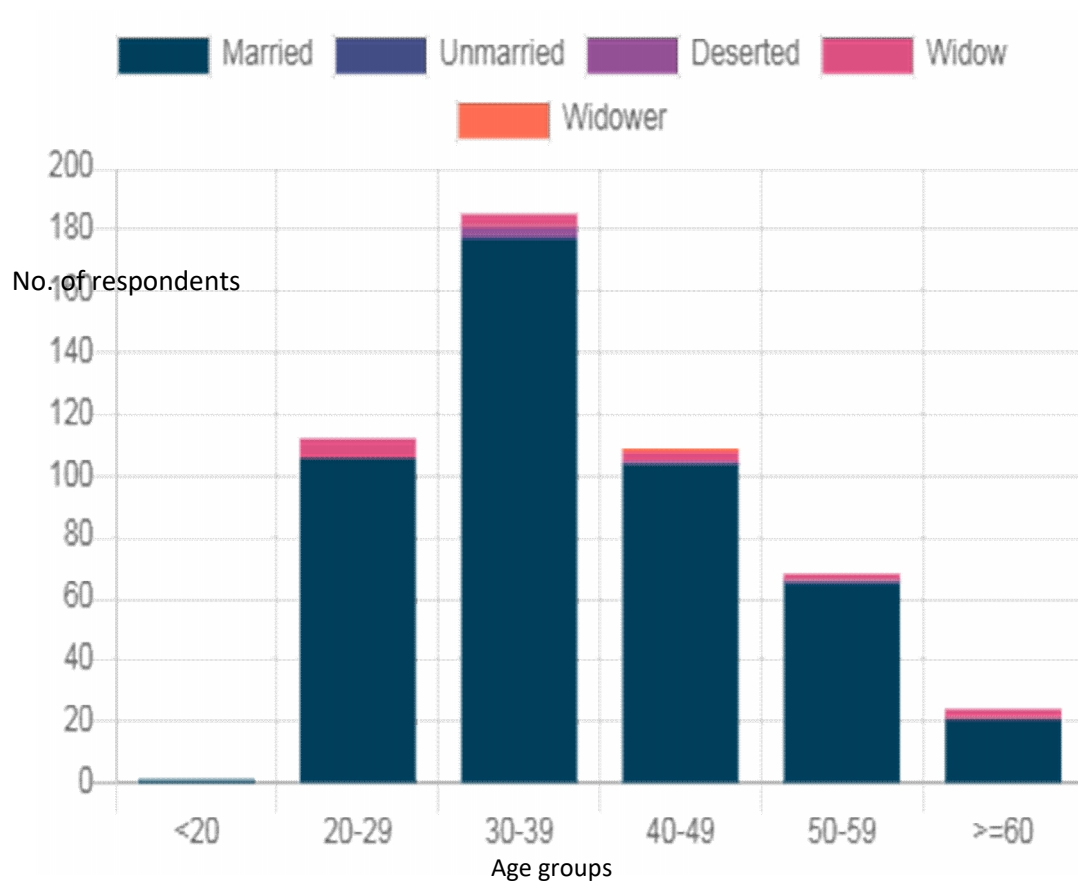
TABLE 4.1

MARITAL STATUS OF THE RESPONDENTS

Marital status		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Married	474	95.0	95.0	95.0
	Unmarried	2	.4	.4	95.4
	Deserted	4	.8	.8	96.2
	Widow	18	3.6	3.6	99.8
	Widower	1	.2	.2	100.0
	Total	499	100.0	100.0	

CHART-1

MARITAL STATUS



It is revealed from the Table 1 that out of the 499 samples chosen for the study, 474 respondents (95 percent) of the fisherwomen are married. Thus, it could be concluded that majority of women respondents are married and 18 of them (3.6 percent) were widows. Chart I and 2 reveals that women of all age groups from between 20 years and 60 years are working in fisheries sector.

CHART-2

THE AGE GROUP OF PEOPLE IN PULICAT

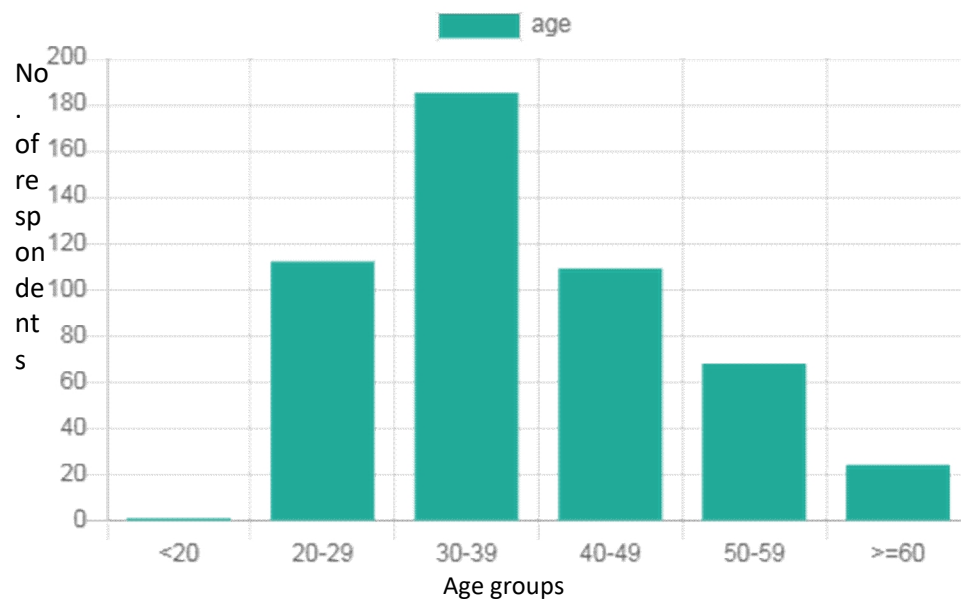


TABLE 4.2

TYPE OF FAMILY

Type of Family		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Nuclear	469	94.0	94.0	94.0
	Joint	30	6.0	6.0	100.0
	Total	499	100.0	100.0	

:

Society is a web of social relationship which begins within the family. Family is of two types namely: Nuclear and Joint Family. The distribution of women respondents and the type of family they live is presented in Table 4.2 which reveals that 469 respondents out of 499 (94 percent) are living in nuclear family type. But the researcher could observe that although they lived in nuclear families they lived in communities where their entire family lived in communities close who helped each other during difficult situation.

TABLE 4.3
EDUCATIONAL QUALIFICATION

Educational Qualification		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No formal Education	396	79.4	79.4	79.4
	Primary (Upto 5th Class)	39	7.8	7.8	87.2
	VIII Std.	27	5.4	5.4	92.6
	X Std	25	5.0	5.0	97.6
	XII Std	9	1.8	1.8	99.4
	UG	3	.6	.6	100.0
	Total	499	100.0	100.0	

Table 4.3 reveals that about 79.4 percent of the respondents did not undergo any formal education. Their illiteracy is being exploited by middlemen and other stakeholders. Due to their illiteracy, they continue to be poor. Low educational attainment and socio - cultural constraints hamper full participation of women in development. It is apparent from the Table 4.3 that, with regard to the educational qualification of the fisher women of Pulicat.

It is clear from Chart 3 that majority of (396) respondents (79.4 percent) of them are illiterates. 39 of the respondents (7.8 percent) of them have attended primary level schooling, about 27 respondents (5.4 percent) have completed VIII standard middle school education and 25 respondents (5 percent) have completed X standard secondary school education and 9 respondents (1.8 percent) had done XII standard higher secondary education. About 3 respondents had completed Under Graduation. Thus, it could be concluded from the analysis that majority of the respondents were illiterates while only 21 percent of them were literates.

CHART 3

EDUCATIONAL STATUS OF THE PEOPLE IN PULICAT

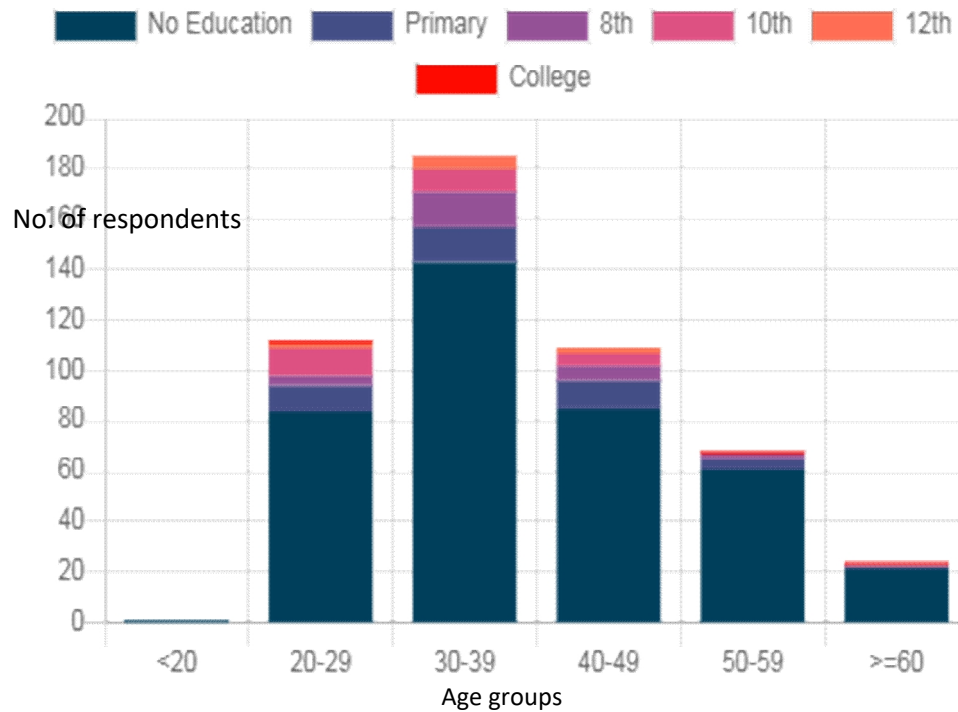
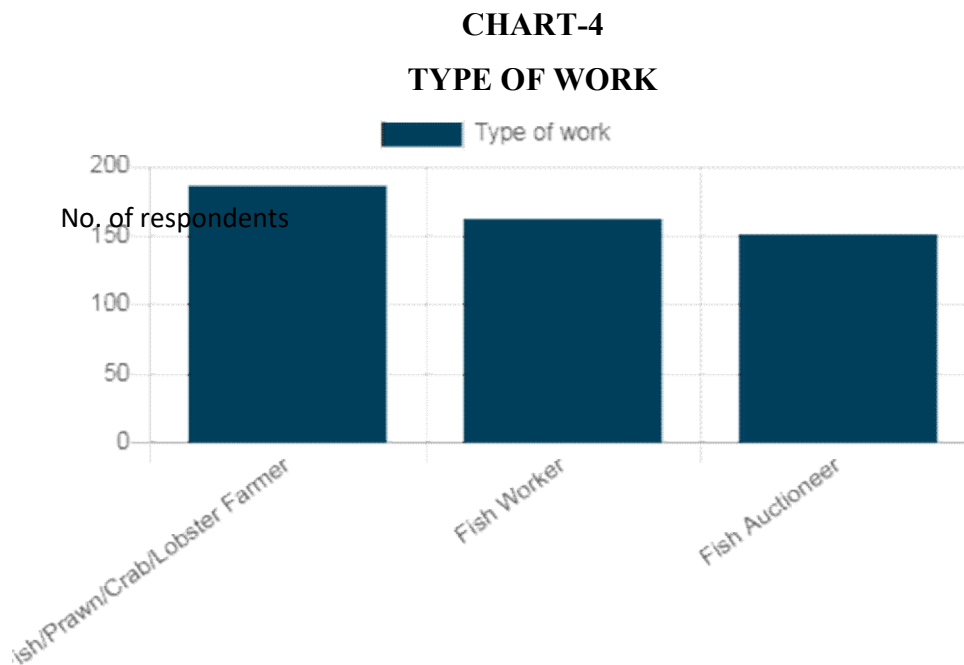


TABLE 4.4
WHAT TYPE OF WORK DO YOU INVOLVE?

Type of work involved	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Fish				
/Prawn/Crab/Lobster	186	37.3	37.3	37.3
Farmer				
Fish Worker	162	32.5	32.5	69.7
Fish Auctioneer	151	30.3	30.3	100.0
Total	499	100.0	100.0	

Indian economy is predominantly agriculture in character. Agriculture contributes about 2 percentage in the India's national income. Fishing is one of the traditional activities in India and the most economically depressed sector in society. It is found from Table 4.4 that fisherwomen involved in various type of work related to fisheries. Some collected crabs, some were involved in shrimp collection and assisted in the markets in transporting fish from boats to the auction centre or to the market or involved in auctioning the fish to the highest bidder. Some of them were retail fishers and some assisted in export. All the fisherwomen in took up all kinds of work related to fisheries. Depending upon their family condition and requirements they involved in the work.



It is depicted from the Table 4.5 that 248 respondents (49.7 percent) of women worked for 6 to 8 hours a day. About 215 respondents (43.1 percent) worked for more than 8 hours. They worked for 9 to 11 hours a day. Only 7.2 percent of them worked for 1 to 5 hours a day. These kind of women had to spend more time in their household responsibilities and hence could not spare more hours in in fishery work

Table- 4.5
How many hours a day do you work?

Number of working hours	Frequenc y	Percent	Valid Percent	Cumulative Percent
Valid 1 - 5 hours	36	7.2	7.2	7.2
6 - 8 hours	248	49.7	49.7	56.9
9 - 11 hours	215	43.1	43.1	100.0
Total	499	100.0	100.0	

CHART—5
 WORKING HOURS OF FISHERWOMEN

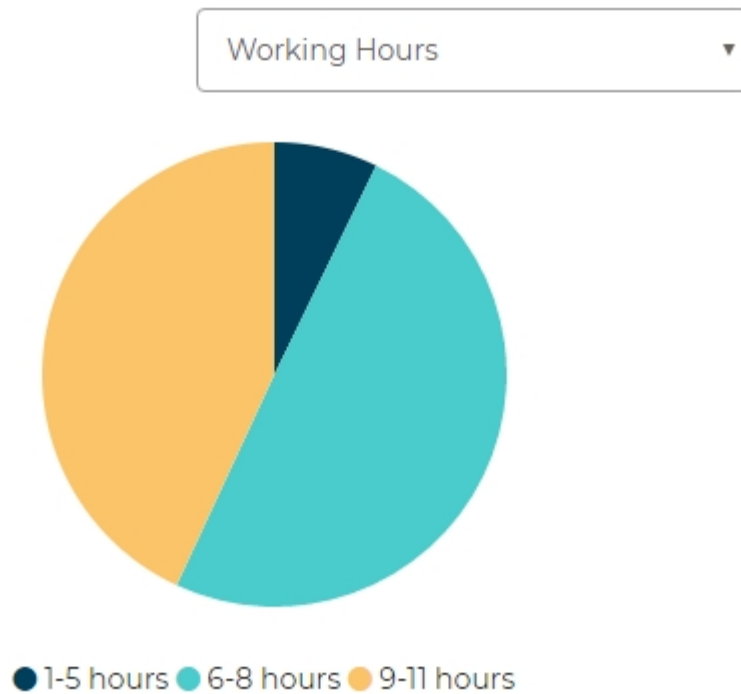


Table-4.6
How much do you earn every day?

Income in Rs.	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Less than Rs100	23	4.6	4.6	4.6
Rs 200	2	.4	.4	5.0
Rs 300	82	16.4	16.4	21.4
Rs 400	310	62.1	62.1	83.6
Rs 500 & above	82	16.4	16.4	100.0
Total	499	100.0	100.0	

The daily income of the fisherwomen may vary. Fisherwomen mostly sell fish by loading fish on their head walking to distant inland villages, undergo strenuous labour for their livelihood and some engaged in actual marketing of fish to augment the family income. Most fishing villages are often poorly linked by roads, access to public transport becomes a question of primary importance. One of the major constraints is the fact that culturally, women with fish are considered unclean and not allowed to travel in the buses.

It is clear from the Table 4.6 that, about 310 respondents (62.1 percent) were earning about Rs. 400 per day. Fisherwomen were able to earn depending upon the type of work and the size of the fishes or the yield or catches. About 82 respondents (16.4 percent) were able to earn above Rs. 500 and above and the number of respondents were able to earn Rs 300 per day. Nearly 23 respondents (4.6 percent) were able to earn only less than Rs. 100 per day.

It is found that women assisted their husbands in doing the household responsibilities and mended the nets or helped in pre harvest and post harvest. Although they did not join their husbands to the deep sea, there were fisherwomen who involved in catching shrimps in the shallow lake by waiting through the night in chill waters. The researcher while interviewing the respondents was able to find that mostly the Scheduled Tribes belonging to the Rajaratnam Kuppam were involved in catching of shrimps. These women looked very muddy and unkempt.

All their hands had wounds due to pricking of shrimps. They had experienced several hardships due to encounters with snakes, crabs or poisonous creatures in the waters.

CHART-6
DAILY INCOME OF FISHERWOMEN

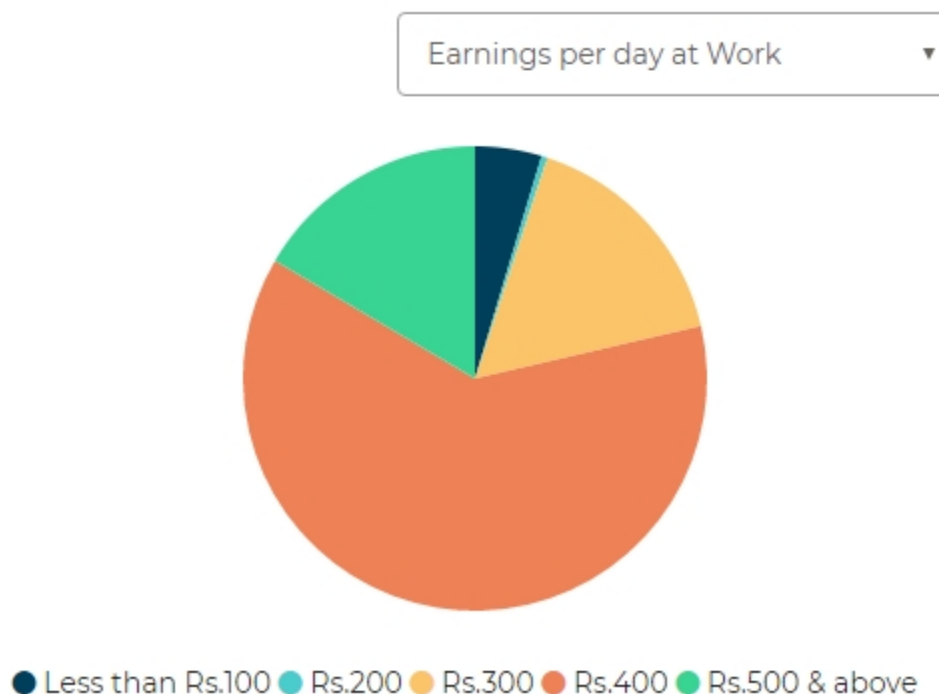


TABLE 4.7
HOW MANY YEARS YOU HAVE BEEN WORKING IN THIS PROFESSION?

Years of work experience	Frequency	Percent	Valid Percent	Cumulative Percent
1-3 years	38	7.6	7.6	7.6
4 - 6 years	22	4.4	4.4	12.0
7 - 10 years	436	87.4	87.4	99.4
More than 11 years	3	.6	.6	100.0
Total	499	100.0	100.0	

Table 4.7 shows that 436 respondents (87.4 percent) of them have been working in this sector for nearly 7 -10 years. It proves that fishers do not prefer any other profession. They prefer continuing in the same job. They tend to quit job only if they were physically unable to work due to ageing or accidents they encountered in their profession.

TABLE 4.8
NUMBER OF MEMBERS EARNING IN YOUR FAMILY?

Number of members earning	Frequency	Percent	Valid Percent	Cumulative Percent
Valid One	249	49.9	49.9	49.9
Two	164	32.9	32.9	82.8
Three	86	17.2	17.2	100.0
Total	499	100.0	100.0	

Table 4.8 reveals that 249 respondents (49.9 percent) only single member earn in the families. In 32 percent of the respondents' families both husbands and wives were earning members in their family. In some cases even their children supported their parents in their profession. It is clear that fishers divided their work equally among themselves. While the male members went to the sea, women took over the work after their husbands returned from the sea. They shared the responsibility in transporting the catches by carrying it on their heads to the markets. They sit for long hours and sell their products. If they are unable to sell their catches they have to preserve the yield in proper storage facilities. Usually the male members handed over their catches to their wives. If the catches are high and big fishes will be auctioned by male members. Otherwise women only handled post harvest yield. Therefore it could be said that both male and female members shared work equally and their total earning has to be used for their family. It is clear that after slogging through night in the sea the men took rest and women took over the

responsibility. Together they shared the work and women equally in the income contribution. It is unfortunate that their work is not recognized as productive income. This research mainly focuses to highlight the economic contributions made by fisher women. As the marketing is dealt by commission agents they act like middle men as Commission Agents because they take commission for marketing the goods. All the products are marketed only through them.

TABLE 4.9
WHO HELPS YOU IN YOUR PROFESSION?

Who helps		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Husband	490	98.2	98.2	98.2
	Mother	3	.6	.6	98.8
	Sister	6	1.2	1.2	100.0
	Total	499	100.0	100.0	

Majority of the respondents expressed that their husbands had assisted them in their profession. As it was clear from the study that the fisher community lived in nuclear families and had to strive hard to make both ends meet. Therefore their fisher husbands went to sea to get the catch and the wives took over the role in post harvest in selling and earning their livelihood.

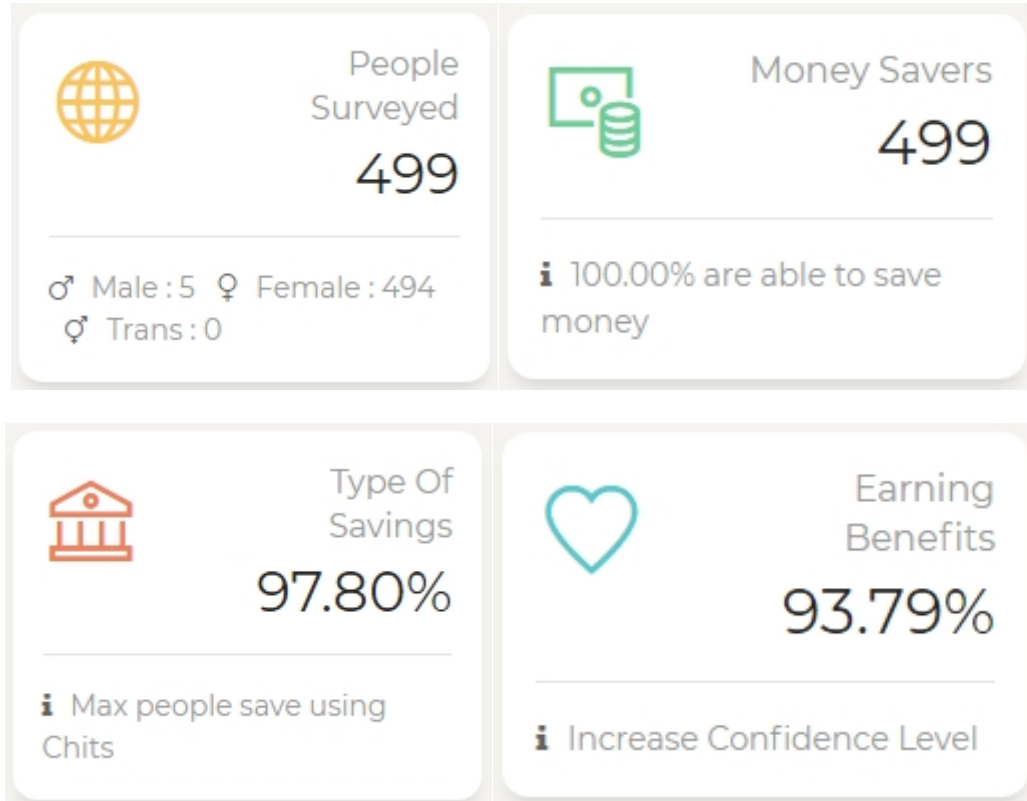
TABLE 4.10
DID YOU FACE ANY CASUALTIES IN YOUR PROFESSION?

Casualties		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	13	2.6	2.6	2.6
	Yes	486	97.4	97.4	100.0
	Total	499	100.0	100.0	

Majority of the respondents expressed that their husbands had met with several casualties and some of them lost their dear ones in the family. Several had badly experienced accidents due to stinging of dangerous stingrays or poisonous snake bites or boat capsize and pricks from crabs and prawns. Despite encountering all kinds of casualties they pursued the same profession because that is the only bread winning source for their lives.

CHART-7

GENERAL OBSERVATIONS OF THE STUDY



From the above chart it is clear that out of the 499 samples collected 5 were men and 494 were women. All the respondents were able to save some amount from their earnings. About 97.80 percent respondents were involved saving their amount through chits. It is clear that those who earned more were involved in encouraging others to contribute in chits. This amount was used by the respondents whenever they were in need of money. A group of 10-15 people joined together in a group and selected a leader among themselves. The leader was authorized to collect money from the members and the members were given chance to take loans. All the members had to compulsorily pay every month towards the loan amount. If the defaulters were unable to pay then the leader pays and takes the money in the end. These kind of unofficial money transactions sometimes paves way for the economically stronger persons to exploit the weaker sections. There are two types of NGOs. 1. Orientational level or 2. Cooperational level. The Operational NGOs main aim is to design and implement development projects. These are both National and International in nature. The Advocacy NGOs main aim is to promote a specific cause.. it involves in

creating awareness and increasing the knowledge of the underprivileged groups. They lobby through press and activists in achieving their goals.

Table-4.11

WHAT TYPE OF WORK DO YOU INVOLVE DURING FISHING BAN PERIOD?

Type of work	Frequency	Percent	Valid Percent	Cumulative Percent
Valid SHG	308	61.7	61.7	61.7
Cattle rearing	180	36.1	36.1	97.8
Others	11	2.2	2.2	100.0
Total	499	100.0	100.0	

The fishing season can broadly be classified into three seasons such as: Peak season, when the catch is the highest; lean season, when the catch is less; and off season, when the catch is too little to venture into the sea. Weather plays a vital role in marine fishing. During the off season, the sea is rough and the fishing activities are limited. In addition to these seasons the Tamil Nadu government restricts fishers from venturing to the sea during the breeding of fishes which is called as ban period. The mechanized boats are not allowed during ban period. The fishing ban period is imposed from 15 April to 15 June every year during the breeding season of fishes.

CHART-8

ALTERNATIVE WORK DURING THE FISHING BAN PERIOD

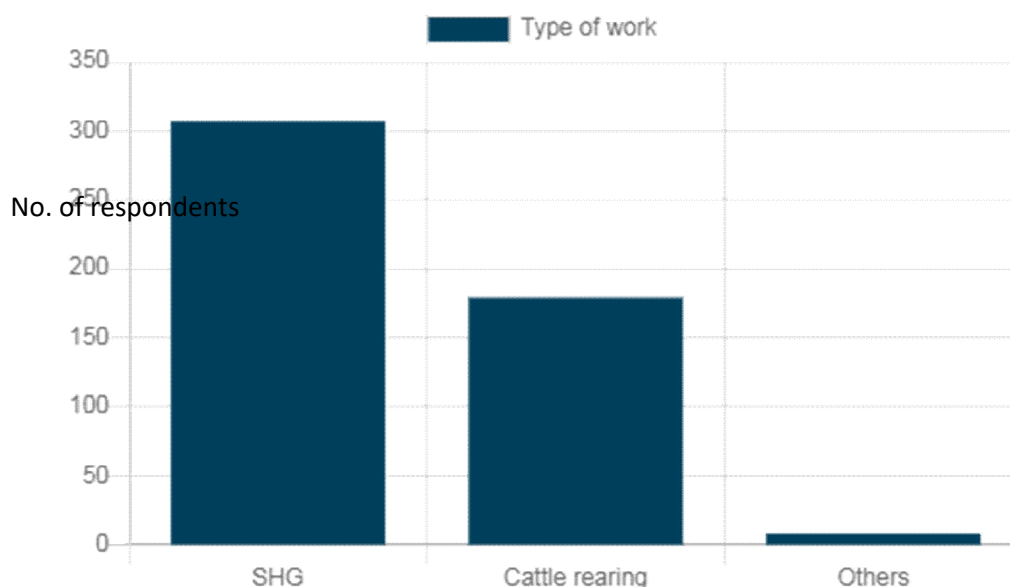


TABLE 4.12
DO YOU THINK THE COMPENSATION PAID BY THE GOVERNMENT FOR THE
BAN PERIOD OF FISHING IS SUFFICIENT?

Satisfied with the compensation received during ban period		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	442	88.6	88.6	88.6
	Yes	57	11.4	11.4	100.0
	Total	499	100.0	100.0	

During the ban period the fishers are not allowed to venture into the sea as it will affect the fingerlings being caught in the yield. If the young ones are caught it will exhaust all the marine resources. The ban period was increased from 45 days to 60 days since 2017. Hence fishers indulge in alternate type of work for their survival. The fishermen utilize 60 days fishing ban period to repair boat, nets. Around 650 boats are anchored during this period. Table 4.9 that, 308 respondents (61.70 percent) involve in SHG work, about 180 respondents (36.1 percent) involved in cattle rearing and 11 respondents (2.2 percent) were managing other work..

Fisherwomen's work is most disadvantaged and marginalized when coastal and marine resources are degraded and depleted during the off season. They are forced to borrow money from the private money lenders. From the Table 4.10 it is observed that, nearly 442 respondents (88.6 percent) of the respondents are not satisfied with the compensation received from the government. receiving a grant of Rs. 5000/- from the Government during the ban period. However, respondent have involved in non-agricultural activities and contributed their earning to the households during the ban period.

TABLE 4.13
HOW DO YOU MANAGE YOUR FINANCIAL NEEDS?

Managing financial needs	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Borrowing	430	86.2	86.2	86.2
Loans from banks	3	.6	.6	86.8
SHGs	66	13.2	13.2	100.0
Total	499	100.0	100.0	

Table 4.11 projects that 430 respondents (86.2 percent) manage their financial needs by borrowing from others. And 66 respondents managed through SHGs. Several efforts have been made to improve the economic status of the rural women by providing them employment opportunities. But all such endeavours have not brought desired results. In agriculture, greater involvement of women than the men is found. It is also observed that in agriculture labour of both men and women is of the same quality but they do not earn equal wages in farm operations. The key to better employment is the education of women and diversification of opportunities supported either by Government projects or by private investors. Government through its plans and policies can empower women by ensuring employment and raising income levels. To ensure the benefits to the rural women, the administrative machinery has to be more vigilant towards security of employed women in rural areas. The first and foremost feature towards empowering women is to allow them availing their basic human right to education and progress of women can only ensure steady economic growth. Ensuring gender equality by removing gender discrimination mainly among the marginalized, unprotected, unorganized and informal women labourers is the key to real women empowerment.

TABLE 4.14
DO YOU HAVE THE FREEDOM TO SPEND?

Freedom to spend	Frequency	Percent	Valid Percent	Cumulative Percent
Valid No	499	100.0	100.0	100.0

Despite earning through hard work for more than five hours who earned Rs. 400 a day approximately per day fisherwomen did not have the freedom to spend.

TABLE 4.15
DO YOU HAVE RIGHT IN DECISION MAKING?

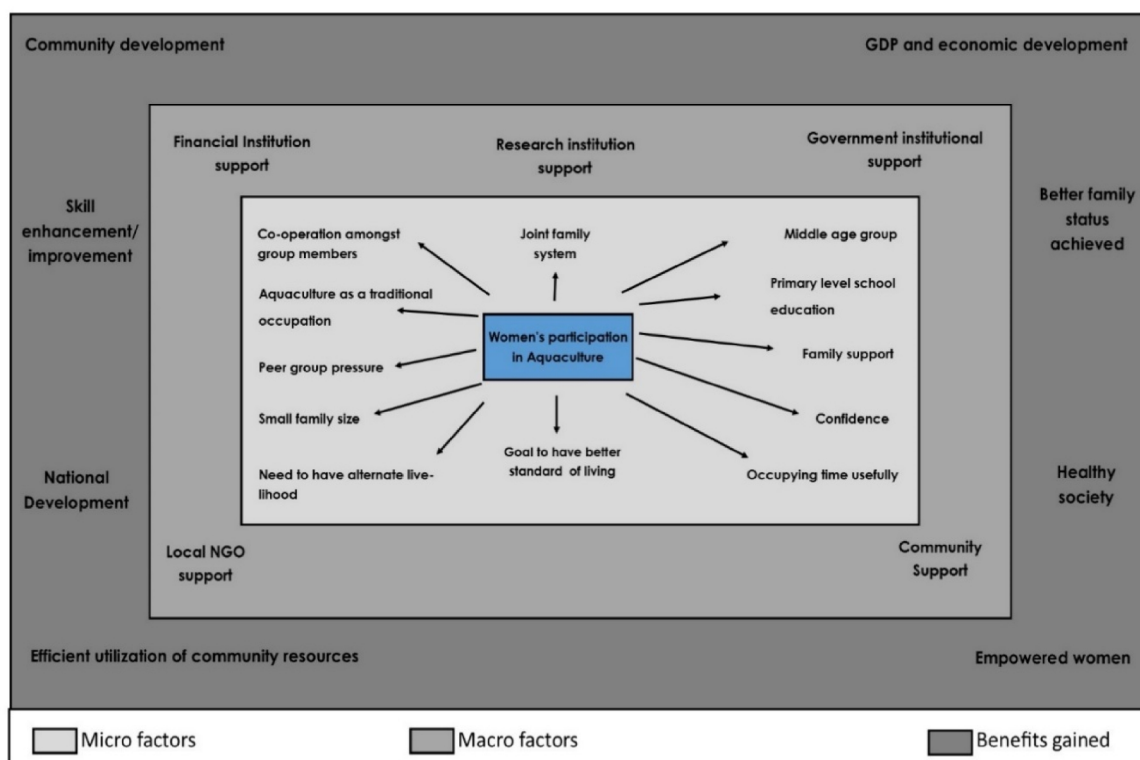
Right in Decision making		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	1	.2	.2	.2
	Yes	498	99.8	99.8	100.0
	Total	499	100.0	100.0	

Almost all the respondents expressed that they had the right in decision making in their families. While interacting with the respondents it was learnt from the respondents that they received various kinds of training from NGOs. Through such training they had improved their confidence level and hence it enabled them to make decisions for their family needs and in their profession.

CHAPTER V

EVALUATIVE STUDY OF GOVERNMENT MEASURES FOR WOMEN DEVELOPMENT

The Thiruvallur District of which the Pulicat village is a part of, has initiated several measures for the upliftment of the fisher folk community in these areas under both Central and State schemes some of which include the Fisheries Development Mission Programme, the Fish Farmers Development Agency, Subsidies released by the BFDA, AGAMT, training programmes conducted for the Tsunami affected coastal villages under Swaranajayanti Gram Swarozgar Yojana, funds provided to renovate the existing prawn and fish farms or to construct new ones under NFDB besides conducting a three day training programme- Reservoir Fishery Management. The Department of Science and Technology has also been involved with imparting technical skills to the fisher folk dwelling in these areas- Technical Training Programme for 120 fisher folk boys for repair and maintenance of outboard motor



engines, Computer Operations Course for fisher folk and SC students and other programmes related to integrated farming and betterment of socio-economic conditions for SC women exclusively.

The Tamil Nadu Fisheries Department had drier and pulveriser machines worth Rs. 8 lakhs established at Pulicat for the benefit of fisherwomen SHG's after imparting training to them

to operate the machines and prepare chicken and fish feed. Along with the government, the role of NGO's in bringing about the upliftment of fisherwomen and a holistic development of the fishing community is also commendable. Agencies like CReNIEO, SCINDeA and WF-UK have had projects catering to women's health, sanitation, leadership, non-formal education, skill development, environmental awareness and Eco restoration.¹

Capacity building for women SHG's and micro-enterprising are other main areas of focus. Most of these programs have therefore, tried to bring about sustainable livelihoods for this community.

NGOs are of varied kind.

1. Charitable NGOs,- help poor by distributing food, medicine, clothes, . They take care of houses, schools, transports. They come to the rescue of people during disasters.
2. Service NGOs-They take care of healthcare, education, family planning
3. Community based NGOs-This is done out of peoples own interest.
4. City wide NGOs-helps the poor, For example Rotary club, Chambers of Commerce and industry, businessmen, association of community organizations.
5. Empowering NGOs-educating the people about socio-economic and political scenario.
6. Bingo NGOs-business friendly
7. CITS-helps scientific community
8. CSO-Civil Society Organization
9. DONGO-Donor Organised NGO
10. ENGO-Environmental NGO
11. QUANGO-Quasi autonomous organization, partly financed by government bodies
12. TANGO-which offers technical assistance
13. GSO-Grassroot support organization
14. MANGO-Market advocacy
15. CHARDS-Community Health and Rural Development Society.

NGOs IN PULICAT

These NGOs play significant role in developing the society for the good. People can support through assist through various ways such as giving donations, by becoming a grassroot volunteer, Several NGOs mushroomed after Tsunami to provide training and capacity building programmes. They provide training on different livelihood options. Some of the known NGOs in Pulicat, Tiruvallur district are

¹ CReNIEO Projects in Pulicat Lake, Thiruvallur District, Tamil Nadu

1. AARDE Foundation, Xavier Benedict info@aarde.in www.aarde.in
2. CReNIEO (Centre for Research on New International Economic Order), Mr. Meer Shah-an NGO dedicated to mangrove restoration along the Pulicat Lake since 2009. It has planted 50,000 samplings in the last decade. They provided community development services such as health care, livelihood and education to fishing communities in 25 villages surrounding Pulicat. They provide nursery and breeding shade to tiger prawns, mullets, shrimps, clamps, oysters, green crabs and turtles. They foster in production of timber, medicinal plants, shell fish and weeds.
3. Madras Social Service Society-SHGs awareness, motivational programmes
4. Jeevajothi-concentrating on children life skill education, non formal education, cooperative departmental store
5. PLANT—safeguarding Pulicat eco system trainings on value addition, small scale artificial reefs
6. Peoples Action Movement-computer training, palm leaf products and marketing, old age home
7. SIGA
8. ATSWA
9. BOOMI
10. INDIAN BANK-SHG lending

LOCAL GOVERNMENT DEPARTMENTS IN PULICAT

- 1, Assistant Director of Fisheries-sea weed culture, green muscle culture, oyster culture, tuna fish culture, training in livestock research institute, Kattupakkam
2. Assistant Director of Animal Husbandry-implementing government programmes, Emergency Tsunami Rehabilitation Project funded by World Bank and Asian Development Bank, veterinary services
3. Assistant Director of Agriculture-implement department programmes. It is unnoticed.
4. Research and Training Organizations (Government)
5. Krishi Vigyan Kendra, Thirurkuppam attached to rice research station
6. TANUVAS Research Centre-Fisheries Research and Extension Centre at Madhavaram-need based services.

ISSUES THAT PREVAIL AS A CAUSE OF CONCERN:

The silting of the river mouths leading to its close is proving detrimental to the fishfolk as it is affecting the catch negatively. That the government has not taken any steps to desilt the lake is causing much unrest and furore amongst these communities. Besides certain unscientific practices are also proving to be problematic to the environment and ecosystem making themselves vulnerable again. Lack of adequate technological upgradation as regards fishing techniques and equipment, are another concern as the competition with the marine fishermen are increasing and eventually the traditional practisers are losing out. Despite earning hardly Rs.200-300, these traditional fisherfolk cannot imagine leaving this occupation as they believe it is the only thing that they are familiar with and skilled in.²

The researcher had included several questions in the interview and questionnaire schedule to find out the effectiveness of the Government schemes and programmes in Pulicat. The respondents were asked to express what kind of benefits did they enjoy? Table 5.1 shows that about 468 respondents (93.8 percent) could develop the confidence level through the training provided by these NGOs and government programmes. But their economic status remains the same. Only 31 respondents (6.2 percent) felt that their economic status had improved.

AWARENESS OF GOVERNMENT POLICIES

92.99%

464 of 499 people think this way

Are Aware of the Marine Fishing Policy

94.79%

473 of 499 people agree to ban period

Agree that Government of India should ban Indian Fisherman from Fishing in Other Countries' Waters

97.39%

486 of 499 expect more facilities

Expect Indian Government should provide more facilities to Fishermen considering the risks Involved in their Profession

² "In Harms Way: Pulicat Lagoon", <http://www.indiawaterportal.org/articles/harms-way-pulicat-lagoon>

98.20%

490 of 499 are aware

Are aware of the advantages of having vessel monitoring systems on Board

96.79%

483 of 499 are willing

Are willing to fit Vessel Monitoring System In their vessel with Government subsidy

97.39%

486 of 499 agreed

Agreed that the Government has alerted and evacuated people during calamities

98.00%

489 of 499 agreed to registration

Agreed to the Vessel Registration and licensing policy

0.60%

3 of 499 people were satisfied

satisfied with the Government welfare policies to the Fishermen Communities

98.40%

491 of 499 expected modern facilities

Expressed that Government should provide modern storage facilities

0.40%

2 of 499 people satisfied

The Insurance coverage schemes not satisfied by majority of the fishermen communities

0.00%

0 of 499 monetary compensation

None satisfied with the Monetary Compensation for Ban Period

98.40%

491 of 499 Effective mariculture needed

Government should formulate more effective policies to help the growth of Mariculture Farming

POST HARVEST FACILITIES

0.00%

0 of 499 satisfied with storage facilities

None satisfied with hygiene standards of storage facilities available

2.40%

12 of 499 agreed that they are paid less

Feel that they are paid less for the goods supplied

100.00%

499 of 499 Agreed exploitation by middlemen

All agreed that the middle men are exploiting fishermen by paying less for their yield supplied

100.00%

499 of 499 people think this way

All agreed that export of Indian Fish Products provide maximum profits than the retail selling In local markets

98.40%

491 of 499 small fishes are utilised

Agreed that small fishes are being utilized without wastage

98.00%

489 of 499 people think this way

Satisfied with the provision to prevent loss of yield/catches

99.20%

495 of 499 Felt quality to be improved

Agreed that Indian Fish products should improve quality to attract International Markets

100.00%

499 of 499 Agreed decline in the yield

Agreed that there was a growing decline In the yield /catches

14.23%

71 of 499 Few interested in joining

Only few women are interested In joining Fishing Industry

14.03%

70 of 499 people think this way

Only few were able to market their Goods without wastage

0.00%

0 of 499 No need to reduce ban

All felt that Government need not reduce the ban period of fishing

11.42%

57 of 499 Compensation is sufficient

Only few felt that compensation paid by the Government for the ban period Is sufficient

AWARENESS ON ENVIRONMENTAL POLLUTION

98.80%

493 of 499 Fisheries is exhaustive

Agreed that Fishery resources are exhaustive

99.20%

495 of 499 Depleting resources

Agreed that there is depletion of marine resources

100.00%

499 of 499 Uncontrollable harvest not good

Agreed that uncontrollable harvest will exhaust marine resources

99.20%

495 of 499 Dumping waste pollutes sea

Agreed that the Pollution of Marine waters are due to dumping of waste Into the Seas

100.00%

499 of 499 Sufficient protection

Agree there are sufficient steps taken for protection of maritime Industry

100.00%

499 of 499 mangroves will prevent floods

Agree that growing of mangroves will help prevent flooding Into residential areas of coastal villages

100.00%

499 of 499 artificial coral reefs helps

Accept that developing artificial coral reef helps In Improving the catches

100.00%

499 of 499 hatcheries are helpful

Agree that developing hatcheries Is helpful for Increasing the yield In catches

100.00%

499 of 499 Aware of marine pollution

Aware of the effects of marine pollution

Majority of the respondents expressed that their confidence level had improved through the various kinds of training they received from the NGOs. Almost all the respondents said that they are unable to influence the Government to improve their standard of living. Therefore it could be derived that Government has to find some effective schemes rather than continue the same measures for fishers. The Department of Fisheries should make use of the academia and allocate more funds to make the fishers economically higher. The fishers wanted the Government to provide a separate space closer to their area where they could run their business independently. They expressed that they are willing to join as a groups to undergo trainings through which they could earn more. As they have realized the importance of education they are sending their children to schools and colleges. If the Government provides preference to their educated children in Fisheries department then they could improve their status.

TABLE 5.1

WHAT KIND OF HELP HAVE YOU RECEIVED FROM THE GOVERNMENT?

Help from government	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Subsidy for boat	49	9.8	9.8	9.8
Housing	79	15.8	15.8	25.7
Welfare measures for children's education	43	8.6	8.6	34.3
Loans	144	28.9	28.9	63.1
Others	184	36.9	36.9	100.0
Total	499	100.0	100.0	

It is clear from Table 5.1 that the Government provided several programmes for the uplift of fishers. The department of fisheries provides subsidy for boats, provides Tsunami houses, welfare schemes for the childrens' education and provides loans through cooperative societies. Members of the cooperative societies are entitled to get several subsidies in purchasing the GPS monitoring in the vessel which alerts the fishers from venturing the sea. Likewise many fishers lives are protected due the monitoring equipments which the fishers have installed in their boats.

Table 5.2
What kind of help have you received from NGOs?

Type of help from NGOs	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Job training	354	70.9	70.9	70.9
Awareness on environmental issues	5	1.0	1.0	71.9
Children's welfare measures	40	8.0	8.0	80.0
Others	100	20.0	20.0	100.0
Total	499	100.0	100.0	

Table 5.2 shows that majority of the respondents about 70 percent of them had attended various types of job training programmes organized by the NGOs. However they lacked space to start their own businesses.

Table 5.5 reveals that all the respondents expressed that they were exploited by the commission agents and middlemen who made quick money. As the fishers were dependent on these middlemen to sell away their products they had to pay commission. If the government provided space and storage facilities they could market their goods independently.

Almost all the respondents said that they preferred exporting their products as they did not have enough storage facilities. The small fishes they were utilized properly by drying without wastage. The government has given storage boxes in which they could store their fishes. But they felt that Government should provide better standards of storage facilities for exporting goods. The respondents expressed that there is growing decline in the yield. Women of younger generation are not interested in continuing in the same profession because this profession did not help them to improve their economic standards. Moreover they have realized the importance of education and they prefer doing other jobs rather than fisheries. The respondents wanted the government to increase the facilities given during ban period because they were compelled to borrow loans as the subsidy was not sufficient. Almost all the respondents are aware of the marine fishing policy. But they stated that the government should increase their welfare schemes by considering the risks involved in their profession. Almost all the respondents are aware of the vessel monitoring system on board. They are satisfied with the vessel registration and licensing policy but they felt that the insurance

coverage is very poor and the monetary compensations given to them was not sufficient. They expressed that the government should formulate more effective policies to help the growth of the mariculture farming.

With regard to opinion on sustainable development of sea, the respondents said that restriction in usage of mechanized boats, hooks, gears, mesh and reducing the size of the boat. They agreed that the marine resources are depleting due to the marine pollution. Steps must be taken to punish those who are dumping of plastics, industrial hazardous waste, sewage waste, human waste, oil spillage into the sea. All the respondents agreed that growing of mangroves will prevent flooding into residential areas. Respondents agreed that growing of artificial coral reefs would help in improving the yield in catches. Similarly developing hatcheries will be helpful to increase the yield.

CHAPTER VI

CONCLUSION AND SUGGESTIONS

Several efforts have been made to improve the economic status of the rural women by the Government of India and the State Governments in providing them employment opportunities. But all such endeavours have not brought desired results. Although greater involvement of women than the men is found in unorganized sectors, yet they do not earn equal wages. The key to better employment is the education of women and diversification of opportunities supported either by Government projects or by Non Governmental Organizations. Government through its plans and policies can empower women by ensuring employment and raising income levels by restricting the interference by middlemen who are exploiting the illiteracy of rural women. To ensure that the benefits reach the rural women, the administrative machinery has to be more vigilant towards security of employed women in rural areas. The first and foremost feature towards empowering women is to allow them understand their basic human right to education. The progress of women can only ensure steady economic growth only when gender equality is ensured by removing gender discrimination mainly among the marginalized, unprotected, unorganized and informal women labourers. The real women empowerment could achieved only women of all cadres have the true decision making power and economic independence.

In the fisheries sector the participation of women before and after fish capture has been given little importance, leading to the invisibility of women as economic contributors to the fishery sector. Women are seen working in net mending, sorting of fishes upon landing, fish retail selling, trading, auctioning fishes in the market, processing and preservation by salting, pickling or drying. It has been observed that men are involved in marketing activities mainly while dealing with intermediaries and when the fish caught is of high commercial value. Otherwise women handle the small scale marketing that involves inexpensive fish varieties. Fish processing and preservation is mainly the arena of women because fisher men go to the deep sea during odd hours and return. Fisherwomen take over the role from unloading the fishes from the boats and segregating the fishes according to their sizes and categories. Then they transport the fishes to itthe auction centre. Senior women who have experience in the fisheries involve in the auction. Whoever bids for the highest price will be given the catches.

The present study reveals that fisher women of Pulicat Lake are engaged in post-harvest fishing activities which have actually increased the total income of their households, fisheries sector and the national income. Both men and women are seen sharing the work. While the men catch fishes, women ensure that it is made use properly. There are some fisherwomen who venture into the lake through night and catch shrimps and crabs. They encounter several dangerous situations like snakes, insects and other creatures sting them when they have to remain stand still to catch prawns. Their hands have scars of stings from prawns. It is seen that India has been leading in shrimp export globally. When the Government takes the credit of achieving a global position, it is necessary that the role of women's economic contribution is recognized. There is an urgent need for the Government to fix minimum wages on hourly basis of work rendered by the fisherwomen. Despite working for longer hours the amount that each family gets end of the day is Rs 200/- to Rs 400/- which includes the labour of the men and women. It is clear that the fishers are being exploited by middlemen and commission agents who are responsible in selling the catches. They take commission from the fishers and the buyers. Therefore it is the need of the hour that government eradicates the inference of middlemen and the fishers could fix their own price based on their yield. It is suggested that the Tamil Nadu Fisheries Department should have a separate unit to monitor and fix minimum wages for the fishers and minimum amount of prices for the category of fishes. Women entrepreneurs who are interested in marketing their products should be allocated separate space in the market where they could do their businesses. Those indulged in exploitation of fishers must be severely punished.

During the off season and the breeding period for the fishes known as ban period the fishers are prohibited from venturing into sea and the Tamil Nadu Fisheries Department remits Rs. 5000/- to each fisherman family as compensation. The 61 day ban on fishing is aimed at protecting and rejuvenating the marine resources. This ban period is effective from April 15 to June 14 on the east coast every year. On the west coast it is effective from June 1 to July 31. The Fisheries Minister Mr.D.Jayakumar announced that the Tamil Nadu government has transferred Rs. 83.5 crore to the bank accounts of 1.67 lakh fishermen as a compensation during the fishing ban period in 2019.¹

Although the Government gives compensation during the ban period, it is not sufficient for the poor fisher families. During such situations the fisherwomen seek informal credit from

¹ <https://timesofindia.indiatimes.com/city/chennai/fishing-ban-compensation-tamil-nadu-govt-deposits-rs-83-5-crore-in-fishermens-bank-accounts/articleshow/69814438.cms>

relatives and neighbours. The banks and other formal credit institutions recognize men as borrowers but women financially support their families by borrowing through informal community links. They tend to do all kinds of alternate jobs like cattle rearing, agriculture, poultry, selling of dairy products assisting in groceries shop, involve in making palm leaf products as Self Help Groups.

It is clear from the study that the post-capture activities, such as fish marketing and processing which women have assumed, depend only on the catch. It requires capitalization which the poor fishing households cannot afford. If the government provides free training and technical assistance to the fishers in aquaculture, storage facilities and seed production they will be able to learn the skills in a better manner. It is observed that only NGOs are providing training and the Government Fisheries colleges and Institutes at Ponneri offers courses by collecting Rs 1000/- to Rs 2000/- The study shows that majority of the fisherwomen were illiterates and few have attended primary level education. While the fishers have realized the importance of education, they are sending their children to schools and colleges. Those women who have completed secondary school education or higher secondary education were able to handle businesses effectively. Although they were given in marriage to illiterate fisher husbands they said they were able to train their husbands and in-laws on the importance of technical training and encouraged them to avail the welfare schemes offered by the Tamil Nadu Government. The schemes for fishers are as follows”

1. Build a house/ Tube Well/ Community Hall
2. Avail Insurance
3. Ban and lean period benefits

NATIONAL FISHERIES SAVING CUM RELIEF SCHEME (NFSRS) FOR MARINE FISHERMEN

1. The fisher men should be a active full time active fisher
2. The fisher men should be a member of a functional local fishers cooperative society/Federation/ or any other registered body
3. The fisher men should be below poverty line (BPL) and between the age group of 18 and 60 years.
4. The fisher men are expected to contribute Rs. 1500/- in 9 months during fishing season. Fishers can avail subsidized ration and fuel through PDS

5. Scheduled Caste and Scheduled Tribe fishermen can avail benefits through the respective departments
6. Government adds Rs 3000/- along with Rs.1500/- contributed by the fishers. The accumulated amount of Rs. 4500/- is disbursed to enrolled fishers in equal three installments during the ban period. every year. The amount will be transferred to their bank account through NEFT.

STATE FISHER SAVING CUM RELIEF SCHEME (SFSRS) FOR MARINE FISHERWOMEN

1. The fisher women should be a active full time active fisher
2. The fisher women should be a member of a functional local fishers cooperative society/Federation/ or any other registered body
3. The fisher women should be below poverty line (BPL) and between the age group of 18 and 60 years.
4. The fisher women are expected to contribute Rs. 1500/- in 9 months during fishing season. Fishers can avail subsidized ration and fuel through PDS
5. Scheduled Caste and Scheduled Tribe fisherwomen can avail benefits through the respective departments
6. Government adds Rs 3000/- along with Rs.1500/- contributed by the fishers. The accumulated amount of Rs. 4500/- is disbursed to enrolled fishers in equal three installments during the ban period. every year. The amount will be transferred to their bank account through NEFT.

FISHING BAN PERIOD ASSISTANCE

1. Each marine fishermen family is eligible to get Rs 5000/- during lean period every year.
2. Tiruvallur to Ramnad district October , November and December
3. Tuticorin and Tirunelveli districts during April, May and June
4. Kanyakumari district during January, February and March
5. Beneficiary should be a active fisher
6. He should be a member of a local registered cooperative society
7. He should fall below poverty line category between age group of 18 to 60 years
8. The amount will be transferred through NEFT

BUILD A HOUSE ONLY FOR FISHERMAN COMMUNITY (CENTRAL SCHEME)

1. Each fisher family will be allowed to construct new houses at the rate of Rs 120,000/- per house
2. Each housing unit should have a minimum plinth area of 25 sq m including sanitation facility
3. Beneficiaries should be actively involved in fishing activities
4. Preference will be given to BPL families
5. Families which are having kaccha house could also be considered for pucca houses
6. A cluster houses not exceeding 29 numbers could be adopted
7. State governments could add assistance for sanitation, water, energy etc
8. State Governments could send proposals with valid documentary evidences to receive subsidy through Additional Director's offices.

BUILD A HOUSE ONLY FOR FISHERMAN COMMUNITY (STATE SCHEME)

1. Each beneficiary should be actively involved in fishing activities
2. Each housing unit should have a plinth area of minimum 25 sq m including sanitation facilities
3. Beneficiary should either have a single patta or group patra of the land for house construction
4. In the absence of patta the registered sale deed document will be considered by the government
5. After getting No Objection Certificate from the District Collector, the house can be constructed.
6. Houses are allowed to be constructed in lands belonging to villages/places of worship after getting NOC
7. Those fishers living in huts can build concrete houses in this scheme provided that they do not own any concrete house in their name.
8. Fishers should not have previously availed any housing scheme

BUILD A TUBE WELL DRINKING WATER FACILITY FOR FISHERMEN (CENTRAL GOVERNMENT SCHEME)

1. One tube well shall be provided to each cluster of minimum 20 houses

2. Per unit cost of the the tube well will be at the rate of Rs 0.50 lakh which can be applied AD offices.
3. Villagers may be provided with alternative source of drinking water in case the tube wells are practically not feasible. The eadditional expenditure if any should be borne by the State Government.

BUILD A COMMUNITY HALL FOR FISHERMEN (CENTAL GOVERNMENT SCHEME)

1. The cluster villages with 75 or more houses are eligible for a community hall community activities
2. The unit cost is Rs. 4.00 lakh per unit
3. The hall should have minimum plinth area of 200 sq m.
4. The maintenance of the hall will be done by Village Panchayats/ Fishers Societies or Bodies
5. State Governments should prove that there are no such community hall in that cluster village

GROUP ACCIDENT INSURANCE FOR ACTIVE FISHERMEN

1. The insurance premium at the rate of Rs. 20.34 per fisher per year
2. The fishers can apply through AD offices
3. Licensed /registered fishers shall be eligible for Rs Two Lakh against death or permanent total disability. In the case of partial permanent disability Rs. One Lakh could be claimed. The fishers are entitled to claim Rs Ten thousand towards hospitalization expenses.
4. The insurance coverage shall be a period of 12 months.
5. It shall be implemented through FISHCOPED²

Reduction of post-harvest losses in fisheries and improved fish processing technology will be an important challenge for the future because fish exploitation may have reached maximum levels. Women's participation is crucial because they play an important part in the post-harvest domain. Training and support with regards to processing, storage, packaging and

² <https://www.fisheries.tn.gov.in/WelfareSchemes>

distribution of fish, and in the management of their enterprises women should be made as the target group.

Industrial pollution has affected the lagoon. The Arani and Kalangi rivers carried fertilizers, petrochemical waste and pesticides. Crab culture ponds and fish processing industries discharge effluents into the lake. Toxic fly ash and hot water from North Chennai Thermal Power Station is a major source of pollution. Two harbours have propped up along the coast. They are the Kamarajar Port and Larson & Toubro's (L&T) Kattupalli Port. These shipyards have made the mangroves scanty. Fish marketing and trading activities are limited as women are less mobile and are expected to operate close to domestic front. Information on prices and market trends are not available as these are usually available only in the central fish markets. Thus it can be concluded that the low educational attainment and socio-cultural constraints hamper the full participation of women in development activities of the fisheries sector. Their ability to use and access available information is affected due to ignorance poverty and illiteracy. The lack of competence and ability, affects their self-confidence in independently pursuing projects. The remarkable functioning of NGOs in training the fisher women have improved their self confidence level but unfortunately the fisher community are stranded with poor socio economic conditions.

RECOMMENDATIONS AND SUGGESTIONS TO THE CENTRAL AND STATE GOVERNMENTS

1. It suggested that the Centre and State Governments should provide free training to the fisher community
2. The interference by commission agents must be strictly eradicated
3. Fishers economic contributions must be recognized as productive work and included in the GDP of the country.
4. Fisherwomen should be paid on hourly basis with minimum wages fixed for per hour.
5. Compensation for deceased members should be carried out with out delay.
6. Jobs can be given to the fisherwomen on compassionate grounds based on their skill and talents.
7. Separate provision of sheds or space to market their goods should be given
8. Ban period subsidy to be increased based on the International Labour Laws on an average of Rs. 150/- per day for 61 days as Rs 9150/-.

9. The educated fishers should be given first preference in jobs pertaining to fisheries as they have practical experience and knowledge both in Centre and State Government jobs.
10. NGOs working among fishers must be motivated to provide free training and skill based training to fisherwomen.
11. Academic institutions should be encouraged to have collaborative research with international agencies, and institutions which could be funded by the Centre Government to have exposure in current advanced techniques which could be adopted in fisheries sector
12. Students from academic institutions should be encouraged to create Awareness programmes as part of National Service Scheme and National Cadet Corps and additional credits to be added.
13. Frequent awareness programmes on environment protection and sustainable development programmes to be conducted as service learning for school and college students and it should be made mandatory.
14. Protection of water resources from pollution should be made stringent with severe punishments with fine and closure of such industries which are indulged in pollution.
15. Heavy fines on vessels which are causing oil spillage without following the international covenants of sea laws to be followed on countries which fail to maintain the standards.

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**DEPARTMENT OF PUBLIC ADMINISTRATION
MADRAS CHRISTIAN COLLEGE (AUTONOMOUS)
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EAST TAMBARAM, CHENNAI-600059**

ECONOMIC CONTRIBUTIONS OF FISHER WOMEN IN PULICAT-A STUDY

PERSONAL DETAILS

- 1. Name**
- 2. Age**
- 3. Sex**
 - (i) Male ii) Female iii) Transgender**
- 4. Educational qualification**
 - (i) No formal Education**
 - (ii) Primary (Upto 5th Class)**
 - (iii) VIII Std.**
 - (iv) X Std**
 - (v) XII Std**
 - (vi) UG**
 - (vii) PG**
 - (viii) Above PG**
 - (ix) Professional degree**
- 5. Name of your Village & Address**
- 6. Marital Status:**
 - (i) Married**
 - (ii) Unmarried**
 - (iii) Deserted**
 - (iv) Widow**
 - (v) Widower**
- 7. Family Type:**
 - (i) Nuclear (ii) Joint**

8. Number of members in your family?

- (i). 1-4 (ii). 5-10 (iii). Above 10

9. What type of house do you live in?

- (i) Hut (ii) Sheet (iii) Concrete (iv) Tsunami Project
(v) Government subsidy

10. Number of dependents in your family?

- (i) 1 (ii) 2 (iii) 3 (iv) 4 (v) more than 5

11. Number of members earning in your family?

- (i) 1 (ii) 2 (iii) 3 (iv) 4 (v) 5 & more

12. Are you suffering from any chronic ailments?

- (i) Yes (ii) No

13. Do you have right in decision making?

- (i) Yes (ii) No

14. Are you able to save any money?

- (i) Yes (ii) No

15. How do you save your income?

- (i) Chits. (ii) Bank (iii) Jewel scheme (iv) LIC (v) SHG

16. What kind of benefits you have enjoyed through your earning?

- (i) Improved economic status
(ii) Increase in confidence level
(iii) Helped in political participation
(iv) Developed social awareness
(v) Awareness on Government policies
(vi) Ensured implementation of Government policies

17. Are you able to make an impact in influencing the Government to bring developments to your village?

- (i) Yes (ii) No

DETAILS OF ECONOMIC CONTRIBUTIONS

18. What type of work do you involve?

- (i) Fish /Prawn/Crab/Lobster Farmer
- (ii) Fish Worker
- (iii) Fish Auctioneer
- (iv) Fish Transporter
- (iv) Fish Retailer
- (v) Self Employed Entrepreneur
- (vi) Central/State Government Supplier
- (vii) NGO Owner/member
- (ix) Fish Wholesaler
- (x) Fish Exporter
- (xi) Co-operative Society Member
- (xii) Field Technician/Aqua Lab/Aqua shops
- (xiii) Working in a Fishing Export Company
- (xiv) Any Other, Please specify

19. How many years you have been working in this profession?

- (i) 1-3 years (ii) 4-6 years (iii) 7-10 years (iv) More than 11 years

20. How many hours a day do you work?

- (i) 1-5 hours (ii) 6-8 hours (iii) 9-11 hours (iv) More than 12 hours

21. Do you take others help in your profession?

- (i) Occasionally (ii) Always (iii) Never

22. Who helps you in your profession?

- (i) Husband (ii) Father (iii) Mother (iv) Sister (iv) Brother
(v) Relatives

23. How much do you earn every day?

- (i) Less than Rs. 100/- (ii) Rs. 200/- (iii) Rs 300/- (iv) Rs 400/- (v) Rs 500 & above

24. Did you face any casualties or accidents which required hospitalization in your profession?

- (i) Yes (ii) No

25. How do you manage your financial needs?

- (i) Borrowing (ii) Loans from banks (iii) Local financiers (iv) SHGs (v) Chits

26. What type of work do you involve during Fishing ban period?

- (i) SHG (ii) Cattle rearing (ii) Small business (iv) Agriculture (v) Seed production
(vi) Hatcheries (vii) Others

- 27. Do you have the freedom to spend your earning from your profession?**
(i) Yes (ii) No
- 28. What kind of help have you received from the Government?**
(i) Subsidy for boat (ii) Housing (iii) Welfare measures for children's education
(iv) Loans (v) Others
- 29. What kind of help have you received from NGOs?**
(i) Job training (ii) Capacity building (iii) Awareness on Government policies
(iv) Awareness on environmental issues (v) Financial assistance (vi) Children's welfare measures (vii) Others

POST HARVEST FACILITIES

- 30. Are you satisfied with the hygiene standards of storage facilities available?**
(i) Yes (ii) No
- 31. Do you feel that you are paid less for the yield /goods supplied?**
(i) Yes (ii) No
- 32. Do you think the middle men are exploiting fishermen by paying less for their yield?**
(i) Yes (ii) No
- 33. Do you think exporting Indian Fish products abroad provide maximum profits than the retail selling in local markets?**
(i) Yes (ii) No
- 34. Do think that small fishes are being utilized properly without wastage?**
(i) Yes (ii) No
- 35. Is there sufficient provision to prevent loss of yield/catches?**
(i) Yes (ii) No
- 36. Do you think the Indian Fish products can improve quality to attract International Markets?**
(i) Yes (ii) No
- 37. Have you experienced the growing decline in the yield /catches?**
(i) Yes (ii) No
- 38. Do you think more number of women are interested in joining fishing industry?**
(i) Yes (ii) No
- 39. Are you able to market all your goods without wastage?**
(i) Yes (ii) No

40. Do you think the Government should reduce the ban period of fishing?

(i)Yes (ii) No

41. Do you think the compensation paid by the Government for the ban period of fishing is sufficient?

(i)Yes (ii) No

AWARENESS ON GOVERNMENT POLICIES

42. Are you aware of the Marine Fishing Policy?

(i)Yes (ii) No

43. Do you think Government of India should ban Indian Fisherman from fishing in other countries' waters?

(i)Yes (ii) No

44. Do you think Indian Government should provide more facilities to fishermen considering the risks involved in their profession?

(i)Yes (ii) No

45. Are you aware of the advantages of having Vessel Monitoring Systems on board fishing vessels?

(i)Yes (ii) No

46. Are you willing to fit Vessel Monitoring System in your vessel with Government subsidy?

(i)Yes (ii) No

47. Do you think the Government has alerted and evacuated people during calamities?

(i)Yes (ii) No

48. Do you agree to the vessel registration and licensing policy?

(i)Yes (ii) No

49. Are you satisfied with the government welfare policies to the fishermen communities?

(i)Yes (ii) No

50. Do you agree that Government should provide more better storage facilities for the catches with modern techniques?

(i)Yes (ii) No

51. Do you think the Insurance coverage schemes are sufficient for the fishermen communities?

(i)Yes (ii) No

52. Do you think the monetary compensation provided for ban period is sufficient?
(i)Yes (ii) No

53. Do you think Government should formulate more effective policies to help the growth of mariculture farming?
(i)Yes (ii) No

AWARENESS ON ENVIRONMENTAL POLLUTION

54. Do you think fishery resources are exhaustive?
(i)Yes (ii) No

55. Do you think there is depletion of marine resources?
(i)Yes (ii) No

56. Do you agree uncontrollable harvest will exhaust marine resources?
(i)Yes (ii) No

57. Do you think the pollution of marine waters are due to dumping of waste into the seas?
(i)Yes (ii) No

58. Do you think there are sufficient steps taken for the protection of maritime industry?
(i)Yes (ii) No

59. How do you think the sustainable development will be possible in fisheries?
(i)Reduce the size of boat
(ii)Control in fishing area
(iii)Control during ban period
(iv)Limiting the duration of fishing period
(v)Restriction on hooks, gears, mesh and hook size of boats

60. What kind of steps should be taken to avoid pollution of sea?
(i)Stop usage of plastics in sea
(ii)Prevention of dumping industrial waste in sea
(ii)Prevent throwing sewage waste in the sea
(iv)Prevent oil spillage
(v) Stop human waste

61. Do you believe growing of mangroves will help prevent flooding into residential areas of the coastal villages?
(i)Yes (ii) No

62. Do you think developing artificial coral reefs helps in improving the yield of the catches?

(i)Yes (ii) No

63. Do you think developing hatcheries is helpful for increasing the yield in catches?

(i)Yes (ii) No

64. Are you aware of the effects of marine pollution?

(i)Yes (ii) No

65. What are the solutions for marine pollution?

(i)Avoid chemicals

(ii)Avoid washing harmful particles in sea

(iii)Influencing policy makers

(iv)Volunteer at any pollution site /accident

(v)Ensure no debris and waste is dumped into the sea