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**“EMPLOYMENT AND INCOME GENERATION OF
WOMEN THROUGH THE FISH PROCESSING AND
SALES UNIT FOR WOMEN GROUPS OF ALAPPAT
PANCHAYATH IN OACHIRA BLOCK”
- A CASE STUDY**

REPORT

**STATE PLANNING BOARD
GOVERNMENT OF KERALA
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Disclaimer

This Study has been prepared by Manju. P, Research Assistant, District Planning Office, Kollam. The facts and figures in this report is based on primary data collected by the author from the study area based on a questionnaire and secondary data collected from various sources and do not reflect the views or policies of Kerala State Planning Board.

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Sd/-
Manju. P
Research Assistant
District Planning Office
Kollam.

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ABSTRACT

The modernization of the fishing sector has resulted in an increase in fish production and consequently, many fish processing industries have emerged. Much of the processed seafood is exported and this export has shown a constant upward growth over the last decade. Specific data on the extent of women's participation in seafood processing units will enable a proper appreciation of their economic worth to be made and this is essential for the planning and optimal utilization of this human potential and the provision of the necessary facilities. With this as the background, the present investigation was undertaken to gain insights into many aspects related to the role, status, and contribution of women working in seafood processing units.

The objectives of the present study are to know the implementation of the fish processing unit of Oachira Block Panchayat and working of the groups, to find out how far the project succeeded in providing employment and income among the members, to analyze the marketing prospects of the product, to examine the sustainability of the scheme.

The major findings of the study are

- Women empowerment through the fish processing unit enhanced employment, especially in rural women; it improves the standard of living of the people in Alappad Panchayat.
- It helps in the creation of entrepreneurial qualities among rural women.
- It paved the way for the production of diversified products, women became self-sufficient.
- It increases the income of the rural women.
- Marketing facilities increased.
- It helps in the up gradation of fish business in Alappad Panchayat.
- Empowerment of women through fish processing unit helps to reduce gender inequality; it helps to reduce the poverty among rural poor in Alappad Panchayat.
- The interference of Kudumbashree units helps in the production of high quality products.
- The sustainability of the project attracts more women to start similar units in the Panchayat.

The important suggestions are,

- The Kudumbashree unit has to provide training facilities to each and every worker in the unit for making better quality products.
- The Panchayat authority has to provide new markets for the products of the unit.
- The unit should approach banks for financial support for the widening of the unit.
- The unit has to find out alternative marketing sources to sell their products.

Chapter 1

1.1 Introduction

The term fish processing refers to the processes associated with fish and fish products between the time fish are caught or harvested, and the time the final product is delivered to the customer. Although the term refers specifically to fish, in practice it is extended to cover any aquatic organisms harvested for commercial purposes, whether caught in wild fisheries or harvested from aquaculture or fish farming.

Larger fish processing companies often operate their own fishing fleets or farming operations. The products of the fish industry are usually sold to grocery chains or to intermediaries. Fish are highly perishable. A central concern of fish processing is to prevent fish from deteriorating, and this remains an underlying concern during other processing operations.

Fish processing can be subdivided into fish handling, which is the preliminary processing of raw fish, and the manufacture of fish products. Another natural subdivision is into primary processing involved in the filleting and freezing of fresh fish for onward distribution to fresh fish retail and catering outlets, and the secondary processing that produces chilled, frozen and canned products for the retail and catering trades.

There is evidence humans have been processing fish since the early Holocene. These days, fish processing is undertaken by artisan fishermen, on board fishing or fish processing vessels, and at fish processing plants.

In the last 50 years, fish consumption per person has doubled on a worldwide basis. Japan, the US and the EU are major seafood markets and depend on imports for approximately half of their consumption.

The global value of processed seafood products in 2004 was €79.6 billion. This is predicted to increase into the future due a combination of factors, e.g. higher disposable incomes, sophistication of tastes, and declining cooking skills. These factors have resulted in an increase in value-added seafood sales, creating more opportunities for the processing industry.

India is the third largest fish producer in the world and is second in inland fish production. The fisheries sector contributes US\$ 4.4 billion to the national income, which is about 1.4 per cent

of the total GDP. With its over 8,000 km of coastline, 3 million hectares of reservoirs, 1.4 million hectares of brackish water, 50,600 sq km of continental shelf area and 2.2 million sq km of exclusive economic zone, India is endowed with rich fishery resources and has vast potential for fishes from both inland and marine resources. Processing of fish into canned and frozen forms is carried out almost entirely for the export market. It is widely felt that India's substantial fishery resources are under-utilized and there is tremendous potential to increase the output of this sector. Total investment in the sector since 1991 has been around US\$ 600 million. With the liberalized policy, fish-processing sector has been attracting more foreign investments. Foreign investment up to 2003 has been US\$ 122.5 million.

The units in the fish processing sector are largely small scale proprietary/ partnership firms or fishermen co-operatives. In the past ten years, the corporate sector has increased its operations in preservation, processing and export of coastal fish.

Oachira block panchayat situated in the north west of Kollam district and adjacent to Alappuzha district is having 6 grama panchayat viz, Oachira, Thazhava, Alappad, Thodiyoor, Clappana and Kulasekharapuram. The block panchayat is gifted with sea, lakes, plains, streams, back waters and paddy fields. The soil of the block is classified as sandy loams, laterite soil, and alluvial soil. The North West side of the block panchayat is gifted with mangrove forests.

Total population of the block panchayat is 2,78,325 as per 2011 census. Of this 1,47,459 constitute females and 1,30,866 males. Out of the total population 18,167 belongs to SC/ST communities. The block panchayat is having a density of 2,314 persons.

The block panchayat has a prominent place in the field of agriculture. The principal crops are paddy, coconut, banana, mango, pepper and vegetables. The major occupation of the people in the block is agriculture. Majority of the people in western region of the block engaged in fishing. As the panchayat is situated in the coastal belt, the fish processing and marketing project has a greater scope. Hence it is proposed to conduct an evaluation study regarding the implementation, selection of beneficiaries, working of the group, purchase and processing of fish, its marketing and income generation among the BPL women of Kudumbashree units included in the project.

1.2 Project Profile.

Specific data on the extent of women's participation in seafood processing units will enable a proper appreciation of their economic worth to be made and this is essential for the planning and optimal utilisation of this human potential and the provision of the necessary facilities. With this as the background, the present investigation was undertaken to gain insights into many aspects related to the role, status, and contribution of women working in seafood processing units.

During the first year of 12th Five Year Plan i.e. 2012-13, Oachira block panchayat selected 81 projects with a total outlay of 1264.14 lakhs. The number of projects selected in each sector is detailed as follows,

Number of schemes in each sector

Table. 1.2

Sector	No.of projects			
	General	SC	ST	Total
Productive	13	7	0	20
Service	27	0	1	28
Infrastructure	30	3	0	33
Total	70	10	1	81

Out of the total number of 20 projects in the productive sector, a project viz; The Fish Processing and Sales Unit for women groups (project no.S0061/13) aimed for employment and income generation of BPL women (Kudumbashree) in Alappad Panchayat of Oachira Block. Hence the said project is selected for the study. The implementing officer of this project is Industries Extension Officer.

The Block panchayat implement the project in Alappad grama panchayat among 20 women Kudumbashree groups (BPL members) each having 10 members with a total outlay of ₹4,00,000 (Rupees Four lakhs) of which ₹ 2,00,000 government

subsidy (development fund of the Block) and ₹ 2,00,000 beneficiary share (contribution by the members of the group). The project aimed at purchase, processing and marketing of fish as the panchayat is having 2 fish co-operative units viz; Kuzhithura Alappad-Parayakkadavu fish Co-operative unit and Cheriyaazheekkal fish Co-operative unit and a large number of fisher folk. The project also aimed at a monthly income generation of ₹ 3000/- per member through the processing and sale of fish.

The subsidy amount i.e. beneficiary share utilized for the purchase of materials required for the processing unit (₹ 10000 per each unit). The materials are purchased by a Purchase Committee constituted for the purpose and it is monitored by the Development Standing Committee.

As the panchayat is situated in the coastal belt, the fish processing and marketing project has a greater scope. Hence it is proposed to conduct an evaluation study regarding the implementation, selection of beneficiaries, working of the group, purchase and processing of fish, its marketing and income generation among the BPL women of Kudumbashree units included in the project.

1.2 Objectives

The broad objective of the study is to find out the impact of the fish processing and sales unit in the income generation among women of Oachira block.

The specific objectives of the study are as follows,

1. To know the implementation of the project and working of the groups and activities that has to be taken place in the processing unit.
2. To understand how far the project succeeded in providing employment and income among the members and to examine the impact of the project on the socio- economic conditions of the members of the group.
3. To analyze the marketing prospects of the product.
4. To examine the sustainability of the scheme.

1.3 Methodology

Area of the study

The coast of Kerala constitutes approximately 10 per cent of India's total coastline. This coastline of 590 km and the Exclusive Economic Zone (EEZ) extends up to 200 nautical miles far beyond the continental shelf, which covers an area of 218536 sq. km. provide opportunities in traditional fishing in inshore waters from ages.

Kollam is an important maritime district of the state with a coast line of 37.3 kms. Fishing has a prominent place in the economy of the district. Neendakara and Sakthikulangara villages thrive in fishing. An estimated number of 23,000 persons are engaged in fishing and allied activities. Cheriazheekkal, Alappad, Pandarathuruthu, Puthenthura, Neendakara, Thangasseri, Eravipuram and Paravoor are eight among the 26 important fishing villages. There are 24 inland fishing villages also. Average fish landing is estimated to be 85,275 tonnes per year. One third of the state's fish catch is from Kollam.

Oachira block panchayat situated in the north west of Kollam district and adjacent to Alappuzha district is having 6 grama panchayat viz, Oachira, Thazhava, Alappad, Thodiyoor, Clappana and Kulasekharapuram. The block panchayat is gifted with sea, lakes, plains, streams, back waters and paddy fields.

The major occupation of the people in the block is agriculture. Majority of the people in western region of the block engaged in fishing. As the panchayat is situated in the coastal belt, the fish processing and marketing project has a greater scope. Hence it is proposed to conduct an evaluation study regarding the implementation, selection of beneficiaries, working of the group, purchase and processing of fish, its marketing and income generation among the BPL women of Kudumbashree units included in the project.

Sample Design and sample size

As there is 20 groups with 10 members each (total 200 members) in the fish processing unit, the design adopted is random based study. With regard to the objectives stated randomly selected 5 groups with a sample size of 15 members (3 members from each group) from the beneficiaries of the project.

Data source

The study is entirely based on primary data. Data is collected from the beneficiaries of the project based on a questionnaire and focus group discussions.

Analysis and interpretation

Appropriate statistical tools will be used to analyze the data.

Scope of the study

Specific data on the extent of women's participation in seafood processing units will enable a proper appreciation of their economic worth to be made and this is essential for the planning and optimal utilization of this human potential and the provision of the necessary facilities.

1.5 Limitation

The study is exclusively based on primary data and is a sample study. Therefore all the inherent limitation of primary data and sample constitute its limitations. Despite this time act as a major limitation for conducting the study.

1.6 Organization of the Study.

The study is organized into five chapters. First chapter gives the introduction. Second chapter deals with an overview of the fish processing unit. The third chapter deals with the review of related literature. The fourth chapter presents the analysis and interpretation of the data and the fifth chapter gives findings and suggestions of the study.

Chapter 2

FISH PROCESSING UNIT -AN OVERVIEW

India's total marine fisher population was 3.57 million, according to the census statistics. Of these, 0.9 million are active fishers, while 0.76 are involved in other allied sector activities. Besides, these there are fishers involved in the inland and aquaculture sector. Fish processing industries also provide a major source of employment, especially to women in rural areas.

2.1 Fish Processing in India

The term fish processing refers to the processes associated with fish and fish products between the time fish are caught or harvested, and the time the final product is delivered to the customer. Although the term refers specifically to fish, in practice it is extended to cover any aquatic organisms harvested for commercial purposes, whether caught in wild fisheries or harvested from aquaculture or fish farming. Fish are highly perishable. A central concern of fish processing is to prevent fish from deteriorating, and this remains an underlying concern during other processing operations.

Fish is a highly perishable food which needs proper handling and preservation if it is to have a long shelf life and retain a desirable quality and nutritional value. The central concern of fish processing is to prevent fish from deteriorating. The most obvious method for preserving the quality of fish is to keep them alive until they are ready for cooking and eating. For thousands of years, China achieved this through the aquaculture of carp. Other methods used to preserve fish and fish products include the control of temperature using ice, refrigeration or freezing the control of water activity by drying, salting, smoking or freeze-drying the physical control of microbial loads through microwave heating or ionizing irradiation the chemical control of microbial loads by adding acids oxygen deprivation, such as vacuum packing.

Usually more than one of these methods is used. When chilled or frozen fish or fish products are transported by road, rail, sea or air, the cold chain must be maintained. This requires insulated containers or transport vehicles and adequate refrigeration. Modern shipping containers can combine refrigeration with a controlled atmosphere.

Fish processing is also concerned with proper waste management and with adding value to fish products. There is an increasing demand for ready to eat fish products, or products that don't need much preparation.

An alternative and obvious way of keeping fish fresh is to keep them alive until they are delivered to the buyer or ready to be eaten. This is a common practice worldwide. Typically, the fish are placed in a container with clean water, and dead, damaged or sick fish are removed. The water temperature is then lowered and the fish are starved to reduce their metabolic rate. This decreases fouling of water with metabolic products (ammonia, nitrite and carbon dioxide) that become toxic and make it difficult for the fish to extract oxygen.

Fish can be kept alive in floating cages, wells and fish ponds. In aquaculture, holding basins are used where the water is continuously filtered and its temperature and oxygen level are controlled. In China, floating cages are constructed in rivers out of palm woven baskets, while in South America simple fish yards are built in the backwaters of rivers. Live fish can be transported by methods which range from simple artisanal methods where fish are placed in plastic bags with an oxygenated atmosphere, to sophisticated systems which use trucks that filter and recycle the water, and add oxygen and regulate temperature.

Dried fish

Fresh fish rapidly deteriorates unless some way can be found to preserve it. Drying is a method of food preservation that works by removing water from the food, which inhibits the growth of microorganisms. Open air drying using sun and wind has been practiced since ancient times to preserve food. Water is usually removed by evaporation (air drying, sun drying,

smoking or wind drying) but, in the case of freeze-drying, food is first frozen and then the water is removed by sublimation. Bacteria, yeasts and molds need the water in the food to grow, and drying effectively prevents them from surviving in the food.

Fish are preserved through such traditional methods as drying, smoking and salting. The oldest traditional way of preserving fish was to let the wind and sun dry it. Drying food is the world's oldest known preservation method, and dried fish has a storage life of several years. The method is cheap and effective in suitable climates; the work can be done by the fisherman and family, and the resulting product is easily transported to market.



Salting

Salting is the preservation of food with dry edible salt. It is related to pickling (preparing food with brine, i.e. salty water). It is one of the oldest methods of preserving food, and two historically significant salt-cured foods are dried and salted cod (usually referred to as salt fish) and salt-cured meat.

Salting is used because most bacteria, fungi and other potentially pathogenic organisms cannot survive in a highly salty environment, due to the hypertonic nature of salt. Any living cell in such an environment will become dehydrated through osmosis and die or become temporarily inactivated.

It was discovered in the 19th century that salt mixed with nitrites (saltpeter) would color meats red, rather than grey, and consumers at that time then strongly preferred the red-colored meat.

Smoked fish

Racks of haddock in a homemade smoker. Smouldering at the bottom are hardwood wood chips. The sacking at the back is used to cover the racks while they are smoked.

Smoked fish are fish that have been cured by smoking. Foods have been smoked by humans throughout history. Originally this was done as a preservative. In more recent times fish is readily preserved by refrigeration and freezing and the smoking of fish is generally done for the unique taste and flavour imparted by the smoking process.

2.2. Fish processing in Kerala

Kerala having an enriched Arabian Sea shore is a dominant state in marine industry of India. The coast of Kerala constitutes approximately 10 per cent of India's total coastline. This coastline of 590 km and the Exclusive Economic Zone (EEZ) extends up to 200 nautical miles far beyond the continental shelf, which covers an area of 218536 sq. km. provide opportunities in traditional fishing in inshore waters from ages.

2.1 District-wise details of Fish Markets in Kerala

Sl.No	Name of Districts	Wholesale Markets	Retail Markets	Total
1.	Thiruvananthapuram	12	313	325
2.	Kollam	21	303	324
3.	Pathanamthitta	3	154	157
4.	Alappuzha	8	228	236
5.	Kottayam	28	67	95
6.	Idukki	11	117	128
7.	Ernakulam	7	190	197
8.	Thrissur	12	124	136
9.	Palakkad	5	79	84
10.	Malappuram	19	178	197
11.	Kozhikkode	24	352	376
12.	Kannur	17	170	187
13.	Wayanad	16	81	97
14.	Kasargod	2	162	164
	Total	185	2518	2703

source: Fish Markets in Kerala

Fish Processing Units

2.2 European Union(EU) approved Fish Processing Units in Kerala

Sl.No	District	Number of EU approved processing plants
1.	Ernakulam	26
2.	Alappuzha	24
3.	Kollam	8
4.	Thiruvananthapuram	2
	Total	60

2.3 Fishing Harbours in Kerala

Sl. No	Harbour	Nature	Location	Remarks
1	Thangassery	Traditional	Kollam	Completed
2	Neendakara	Mechanised	Kollam	Completed
3	Munambam	Mechanised & Traditional	Ernakulam	Completed
4	Azheekkal	Mechanised	Kannur	Completed
5	Puthiyappa	Mechanised	Kozhikode	Completed
6	Chombal	Traditional	Kozhikode	Completed
7	Moplabay	Mechanised & Traditional	Kannur	Completed
8	Beypore	Mechanised	Kozhikode	Completed
9	Vizhinjam	Mechanised	Thiruvananthapuram	Operational
10.	Muthalappozhy	Mechanised & Traditional	Thiruvananthapuram	Under Construction
11.	Kayamkulam	Mechanised & Traditional	Alappuzha	Under Construction
12.	Thottappalli	Mechanised	Alappuzha	Under Construction
14.	Koyilandi	Mechanised & Traditional	Kozhikode	Under Construction
16.	Thalai	Mechanised & Traditional	Kannur	Under Construction

SOURCE: Fishing Harbours in Kerala

2.3 Marine Fisheries Scenario of Kerala

The coast of Kerala constitutes approximately 10 per cent of India's total coastline. This coastline of 590 km and the Exclusive Economic Zone (EEZ) extends up to 200 nautical miles far beyond the continental shelf, which covers an area of 218536 sq. km. provide opportunities in traditional fishing in inshore waters from ages. The continental shelf area is 39139 sq.km., the area within the

18m depth range accounts for 5000 sq.km, the area between 18-73m is approximately 25000 sq.km. and 73-182 m is the balance area.

Kerala ranks first in marine fish production of India forming nearly 25% (average 5.75 lakh tonnes) of the total annual production. Currently the annual export of marine products from the state yields to the nation a foreign exchange of ₹ 1,100 crores. There has been spectacular growth in the marine fisheries sector of the state due to fisheries friendly government policies, well developed harvest and post-harvest infrastructure and increased demand for seafood both in the domestic and export markets. Kerala has been in the forefront in absorbing innovative and new technologies in fishing practices and adoption of these technologies has led to marine fisheries to take a complex structure. The growing demand resulted in fishing intensification, extension of fishing grounds, increase in overall length, fish holding capacity of the trawlers, fishing effort in terms of fishing hours through multi-day fishing by the mechanized sector and enhanced fishing operations by the motorized sector especially the ring seiners. The intensification of mechanized fishing, perceived as a threat to the sustenance of traditional fisheries sector and resource sustainability, culminated in the regulation of mechanized fishing activities through the Kerala Marine Fisheries Regulation Act 1980, and thereby enforced a ban on bottom trawling during the monsoon season since 1988.

2.4 Fishing scenario in Kollam



Kollam district (formerly Quilon) is one of 14 districts of the state of Kerala, India. The district has a cross-section of Kerala's natural attributes; it is endowed with a long coastline, a major Arabian Sea seaport and an inland lake (Ashtamudi Lake). Kollam is the capital of Kerala's cashew industry. Plains, mountains, lakes, lagoons and backwaters, forests, farmland and rivers make up the topography of the district. The area had trading relationships with Phoenicia and Ancient Rome. About 30 percent of the district is covered by Ashtamudi Lake, making it a gateway to the Kerala backwaters. The Thevalakara and Thekkumbagam panchyaths established the ancient korekini ("sea pointed inland") port of Tarsish in 1500 BC. Kollam is also known as The God's Own Capital.

The western portion of Kollam is bordered by the Laccadive Sea. Kollam's coastline is 37.3 kilometres , 6.3 percent of Kerala's total coastline. Neendakara and Sakthikulangara are important fishing villages. There are an estimated 26 villages whose livelihood depends entirely on fishing. Cheriazheekkal, Alappad, Pandarathuruthu, Puthenthura, Neendakara, Thangasseri, Eravipuram and Paravoor are among the prominent fishing villages. One-third of Kerala's fish production (including 60 percent of its prawn catch) is contributed by Kollam, whose average fish production is estimated at 5,275 tonnes. Nearly 3,000 mechanized boats operate out of its fishing harbour.

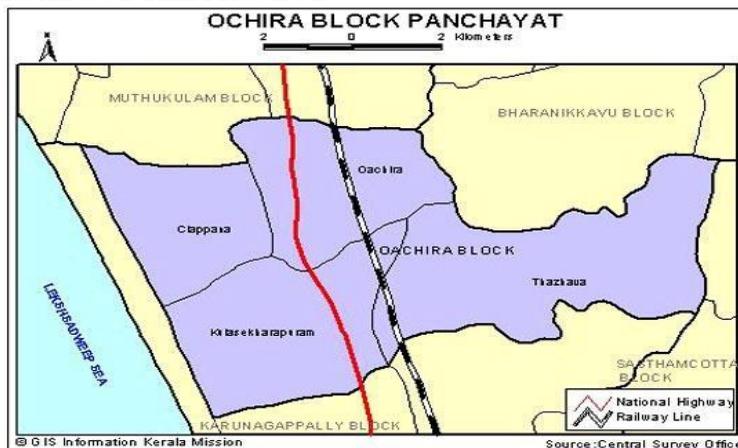
Kollam is an important maritime district of the state with a coast line of 37.3 kms. Fishing has a prominent place in the economy of the district. Neendakara and Sakthikulangara villages thrive in fishing. An estimated number of 23,000 persons are engaged in fishing and allied activities.

There are 93 producer co-operatives, two credit co-operatives and one marketing co-operative in the fisheries sector. There are 38 Fishermen Development Welfare Co-operative Societies in the district. Nearly 3000 mechanised boats are operating from the fishing harbour. FFDA and BFFDA are promoting fresh water fish culture and prawn farming respectively. A model fishing village with 100 houses is coming up at Eravipuram. A model prawn farm is coming up at Ayiramthengu and a few new hatcheries are also

coming up to cater to the needs of the aqua culturists. About 60% of the production of prawn in the state is from this district.

With this as the background, the present investigation was undertaken to gain insights into many aspects related to the role, status, and contribution of women working in seafood processing units.

2.5 ABOUT THE PROJECT



Oachira block panchayat implemented a project viz, Fish processing and sales units for women groups in Alappad Panchayat of the block and aimed for employment and income generation of BPL women (Kudumbashree) in Alappad Panchayat. Majority of the members in this project is from the traditional fishing community of the Panchayat who were toiling in the sun and rain vending fish all over the city with big aluminium basins on the heads have today been provided a better way of fishing and vending through this initiative. They no more go house to house for sales but provided packed dried fish to the shops in accordance with their demand i.e. order given by them.

It has been implemented through 20 women Kudumbashree groups each having 10 members with a total outlay of ₹ 4 lakh of which ₹ 2 lakh Government subsidy and ₹ 2 lakh beneficiary share. Machineries tools and other movable assets

were installed with the help of Kudumbashree Mission. Training and capacity building components were executed by Kudumbashree. The project aimed for a monthly income generation of ₹ 3000/- per month. This project has helped to improve the life of its poor beneficiaries.

Its products especially dried fish and pickles, hygienically processed are beneficial to the consumers especially the working couples. Pickles has high demand from the customers as they demand it for sending it to the foreign countries where their relatives are working and settled and to the army men of the locality working in different parts of India.

2.6 PROJECT COMPONENTS:

- **Identification and selection of beneficiaries:**
Alappad grama panchayat had identified and selected 200 beneficiaries within the age group of 20-60 suited for the project, comes under the traditional fisher folk among BPL families.
- **Implementation of the project:**
The 20 groups selected for the implementation of the project are provided with ₹ 10000/- per group as Government subsidy and ₹ 10000/- pooled by the members of the group themselves for the project.
- **Working of the group:**
Each group has particular centres for carrying out their activities.
- **Activities of the group:**
The group members purchase fish from the Azheekkal harbour directly and after cleaning, drying and packing sell the products at the market.
- **Marketing:**
The main raw material for the project is fish. All the groups are working in Alappad panchayat and one of the main harbours in Kerala, Azheekkal harbour is in this panchayat. So fish is available easily and at low cost. 99% of the natives are using fish daily, and the products are made in a very hygienic manner, hence the product has good marketability.

Chapter 3

Review of Literature

A review of the existing literature helps the researcher to understand the nature and quantum of research studies already undertaken in a particular area. In India and the state, considerable research on the fish processing scenario has been done during the last years. There are several studies conducted by many researchers on various aspects of fish processing. Some of the studies is as follows.

1. “The involvement of female labour in seafood processing in Sri Lanka: impact of organizational fairness and supervisor evaluation on employee commitment” Study by D.A.M. De Silva and M. Yamao.

D.A.M. De Silva and M. Yamao in their study “The involvement of female labour in seafood processing in Sri Lanka: impact of organizational fairness and supervisor evaluation on employee commitment” reveals the fact that the expansion of fish export has been associated with the feminization of the fisheries labour force. Employment in the fish processing sector provides women with some degree of economic autonomy, improved status and influence within their households. The seafood processing industry opens up new avenues to Sri Lankan women to redefine their position in fishing communities.

2. “The impact of fisheries development and globalization processes on women of fishing communities in the Asian region” an article published by Chandrika Sharma.

This paper looks at the impact of fisheries development and globalization processes on women of fishing communities in the Asian region and the responses of women of these communities to these developments. It is divided into the following sections: (1) Fisheries in Asia (2) The role of women in fisheries in Asia (3) Impact of fisheries development and globalization processes on women of fishing communities (4) Women’s participation in organizations (5) A feminist perspective on fisheries: a need for clarity and (6) Important research issues. While all these remain important areas for research, the paper demonstrates that any

research should be undertaken in a participatory manner, in ways which clearly benefits and empowers those at the community level, particularly women.

3. “Fish Processing & Technology” Article by Mohammad Rais, Shatroopa Acharya and Neeraj Sharma.

In this paper, the authors provide a detailed analysis of food processing industry in India, its S&T capability, skills and employment opportunities. Fish processing industry is slowly and steadily becoming one of the major industries of our economy. The factors which have been used to study food processing industry are S&T capability of sector, its employment generation capacity and skills needed in the sector. The employment generation capacity highlights growth and size of the industry and skills about the kind of human resources involved in the industry, the level of technology used in the sector. The employment generation capacity of the sector is huge, but the industry is not working at its potential.

4. “Future of fish processing industry of India”
Future of fish processing industry of India. MBAI Special Publication dedicated to Dr. N K Panikkar.

In this article The fish processing industry in India, during the past ten years has been rather exclusively concerned with shrimps largely because of the easy market which the shrimps provide abroad. The impact of shrimp export has not been very healthy, as the industry failed to diversify itself to other fish and fish products. Shortage of Shrimps as raw material in some areas or in certain seasons has led to under utilization of the freezing and canning plants. Surely the future of the processing industry in India does not lie in shrimps alone, for these constitute only about 12% of the country's total catch. Therefore, all other fishes including the trash fish should be considered first as, important by the industry. The Central Institute of Fisheries Technology has made considerable advance on the economic utilization of many other varieties of fish. These include marketing of the entire fish, fish fillets and picked meat. Other products such as fish flour, fish protein concentrate, fish hydrolysate, fish soup powder, fish flakes and fish sausages seem to have great possibilities.

5. "Development of marine resources, fisheries policies and women's rights in the Pacific Islands" Study by Vina Ram- Bidesi.

This paper illustrates the importance of marine resources in the Pacific Islands, and analyses current and emerging issues relating to fisheries policies and how these may affect women in the fisheries sector in the region. Some initiatives to integrate gender issues are outlined and other possible avenues for women's greater involvement through incorporating their interests and concerns are discussed. Some preliminary insights into gender-related policy implications within the fisheries sector are discussed by focussing on the industrial and artisanal sectors. A gender perspective aims to expose the contradictory processes that are at play with the shift towards a globalized economy aimed at improving the welfare of society at large.

6. "ICSF'S NEWS LETTER ON GENDER AND FISHERIES" By Nalini Nayak a member of Protsahan, an NGO based in Trivandrum, India, and a member of ICSF

In this newsletter, it is mentioned that globally, women in fisheries face multiple crises. The corporate takeover of the coasts; the retreat of the State from basic sectors; inequitable modes of fishing; iniquitous trade and tariff regimes; the large-scale depletion and pollution of coastal resources: while these adversely affect communities, the impact on women's lives is particularly pernicious. Forced to fend for the family, women find themselves pushed into the most exploitative labour arrangements, shackled in domestic chains and left vulnerable to fundamentalist forces within communities who recast women's roles in the most regressive terms.

Women in fisheries have gained by organizing themselves for their rights. In several parts of the world, women have fought for space in markets to sell fish, for access to credit, for the right to travel on public transport, for recognition as workers in government welfare boards, and so on.

7. “Women’s net worth- South African women struggle for their rights in traditional small-scale fisheries” article by Jackie Sunde Research and Advocacy Co-ordinator and Rose Telela, Information and Documentation Co-ordinator, Masifundise Development Trust, Cape Town, South Africa

Women from traditional fishing communities along South Africa’s coastal stretch have always played a critical role in the harvesting of marine resources and in household livelihood. The nature of their role, however, differs considerably from region to region. On the eastern seaboard, women can trace their harvesting of inter-tidal resources back to the Stone Age. In these areas, women and young girls are the primary harvesters of protein resources for their families. In the western and northern regions, women have traditionally played a key role in pre- and post-harvesting activities; many also work as seasonal workers in processing plants. Integration with global markets has meant a reduction in employment opportunities in these regions as the bulk of the fish and seafood catch is now processed offshore or shipped live to northern markets.

8. “VinVis: The women in fisheries network” by Cornelia Quist a supporter of VinVis and a member of ICSF

VinVis, the women in fisheries network of the Netherlands, is an autonomous women’s organization. It consists of wives of fishermen from traditional fishing communities, who are concerned with a sustainable future for the fisheries and their communities and also feel that women’s role in fisheries should be recognized and validated. The origins of VinVis are rooted in a symposium held in April 2000 on the needs and aspirations of wives of fishermen in the Netherlands. Presented in the symposium were the results of a pioneering research study, commissioned by the Dutch Directorate of Fisheries, on the role of fishermen’s wives. The study revealed that in addition to domestic work and child care, the wives of boat-owner’ fishermen were largely involved in activities related to the family fishing enterprise. However, these activities were not registered in the accounts, and though officially invisible, were valued at an estimated one million Euro annually. The majority of the women were also engaged in voluntary community service. The study found that even though the majority

of the women indicated they were interested in fishery policies, very few actually participated in meetings called by fishermen's organizations.

9. "Women as fishers: Issues and struggles" By Maria Divina Munoz, member of Women in the Fisher folk Movement, Philippines

In the Philippines, the fisheries sector comprises four sub-sectors: municipal (capture) fisheries, commercial (capture) fisheries, aquaculture and fish processing. The majority of women and men for whom fisheries is a source of livelihood are found in the municipal fisheries sub-sector. Municipal fisheries refer to coastal fishing activities by means of traditional and simple fishing tools, primarily for subsistence. As such, it is similar to artisanal fisheries but would also include aquaculture workers and small-scale aquaculture producers. International activities go hand in hand with local ones. Lobbying with governments is necessary at both the local and national level for accessing funds allocated for gender and development programmes, for social services, for the resettlement of displaced fisher folk and for fish processing and marketing activities.

10. "World at work: Fish processing workers THE FISHING INDUSTRY IN SOUTH AFRICA" by M F Jeebhay, T G Robins, and A L Lopata.

The fishing industry in South Africa employs approximately 30, 000 workers in direct employment in more than 100 workplaces and 60, 000 workers in related jobs, supplying food for the entire Southern African sub-region. Labour in this industry tends to be divided along gender lines, with men almost exclusively going out to sea to catch the fish and women doing the majority of on-land processing. A large proportion (62%) of the workforce in fish processing plants is female and at least one third of the workforce is employed on a seasonal basis by the industry.

11. “Status of women employed in seafood pre-processing units of Alappuzha, Kerala” study by Dhanya G -Karwar
Research Centre of Central Marine Fisheries Research
Institute

In this study the author reveals the fact that the fisheries sector in India plays a vital role in the Indian economy. Although the fishing and fish processing industry has experienced enormous growth in recent years, none of the workplaces has industrial hygiene or surveillance programmes to evaluate the effects of exposure to seafood and work in a cold environment. There are a number of issues faced by women workers in the pre-processing and processing units which remain unaddressed due to various social and economic considerations. It is recommended that further epidemiological studies need to focus on quantifying the disease burden attributed to sea food exposure and identify specific risk factors for allergic sensitisation to occupational seafood allergens.

Chapter 4

Analysis and Interpretation

The data has been collected according to the objectives of the study. The results are the following.

Fish processing unit- Socio economic profile.

Here the investigator tried to make an analysis of the socio economic profile of the beneficiaries of the fish processing unit.

4.1.Age-wise classification

First the investigator tried to find out the age distribution of the beneficiaries. The survey conducted among the sample population of 15 respondents shows that most of the beneficiaries are in the age group of 40 to 50 which constitute 47% of the sample. Only 13% i.e. 2 respondents are in the age group 20 to 30.

Table. 4.1 Age-wise classification

Age group	No.of respondents	% of respondents
20-30	2	13
30-40	3	20
40-50	7	47
50-60	3	20
Total	15	100

source: Primary survey

4.2. Religion-wise classification: Social category of the beneficiaries.

The sociological profile of the beneficiaries was also investigated. The following table gives an analysis of the respondents on the basis of religion. From the table it is clear that most of the people engaged in the fish processing unit comes under the traditional fishermen community i.e. 67%. Only 2 respondents are from general category, it constitutes 13% and 3 respondents i.e. 20% are in the SC/ ST community.

Table.4.2 Religion-wise classification: Social category of the beneficiaries.

Category	No.of respondents	% of respondents
General	2	13
OEC	10	67
SC/ ST	3	20
Total	15	100

source: Primary survey

4.3. Educational Qualification

The respondents are classified with respect to their qualification. The following table gives an idea of this.

Table.4.3 Educational Qualification

Category	No.of respondents	% of respondents
Below S.S.L.C	3	20
S.S.L.C	5	33
Above S.S.L.C	7	47
Total	15	100

source: Primary survey.

From the analysis it is understood that most of the beneficiaries are educated above S.S.L.C i.e. 47% which constitute 7 respondents. Only 20% are qualification below S.S.L.C i.e. only 3 respondents.

4.4.Kudumbashree Mission and Training

The sample survey conducted among a population of 15 respondents reveals that 12 respondents which constitutes 80% of the total sample reveals that they got training from Kudumbashree Mission after they got employment in the fish processing unit and only 3 respondents which constitute 20% of the total sample reveals that they will not get any training from the Kudumbashree mission. Figure 4.4 is a diagrammatic representation of Kudumbashree Mission providing training to the members of the fish processing unit.

Table.4.4 Kudumbashree Mission and Training

No.of people received training	12	80%
No.of people not received training	3	20%
Total	15	100

source: Primary survey

4.5. Fish processing unit And Women Friendly Environment

Out of the 15 respondents 14 respondents reveals that there is women friendly environment in the unit, only 1 respondent has a different opinion. The following figure reveals the situation.

Table.4.5 Fish processing unit and women friendly environment

Category	No.of respondents	% of respondents
Women friendly environment	14	93%
Not women friendly environment	1	7%
Total	15	100

source: Primary survey

4.6. Fish processing unit And Women Employment

With regard to the working of the unit and employment level among the rural women in Alappad Panchayat, out of the 15 respondents all respondents ie.,100% expressed that this unit paved the way for creating employment opportunities among rural women.

4.7. Fish processing unit and Income Generation

One of the objectives of the study was to examine the economic impact of the project among the beneficiaries of the scheme. It is came to know that all the 15 respondents i.e., 100% agree that the operation of the fish processing unit resulted in the increase in the income of the beneficiaries.

4.8. Fish processing unit and Increase in Income.

From the data 100% of the respondents revealed that with the introduction of the fish processing unit their income increased. Out of the 15 respondents 5 respondents which constitute 33% revealed that their income increase by ₹ 1500 per month 14% respondents reveals that their income increased by ₹ 2000/- per month and 20% opined that their income increased by ₹ 3000 per month and the remaining 33% reveals that their monthly income increased by more than ₹ 3000/- per month. This difference in income is mainly due to the difference in work participation of the persons. They are paid according to the work done by them.

Table.4.6 Fish processing unit and increase in income

Category	No.of respondents	% of respondents
Increased income by ₹ 1500	5	33
Increased income by ₹ 2000	2	14
Increased income by ₹ 3000	3	20
Increased income by more than ₹ 3000	5	33
Total	15	100

source: Primary survey.

4.9. Fish processing unit and Standard of Living

As the beneficiaries of the project are rural women from fishing community especially among the BPL category, the study reveals that the operation of the fish processing unit resulted in increasing the living standard of the beneficiaries. With their earnings from this unit, they can utilise it for educating their children, for the purchase of household amenities, to meet the medical expenses and a level of savings also. All respondents agreed the same. It was reported that the income of the women was used primarily to meet various household expenses. There were some families which depended solely on the woman's salary for their sustenance. Younger, unmarried women tend to contribute less to family income, instead retaining most of their earnings as personal savings, while older women make a greater contribution to meet the family's expenses.

4.10. Role of Kudumbashree and fish processing unit

One of the objectives of the study was to identify the role of Kudumbashree in the successful working of the fish processing unit.

All the respondents i.e. 100 % opined that Kudumbashree played a major role in the operation and development of the fish processing unit in Alappad Panchayat. All the participants are Kudumbashree members and in all the Kudumbashree meetings the working of the group is discussed and further improvement is also suggested.

4.11. Fish processing unit and women empowerment

It is come to know from the beneficiaries that the fish processing unit had succeeded in empowering rural women especially the marginalised groups. The analysis provides a positive response. All the members agreed that the working of the unit resulted in the empowerment of the women. With the income from the Fish Processing Unit, their position in the family and society has improved and they can utilize the income for helping their family members and can contribute for the educational purposes of their children.

Chapter 5

Summary of findings and suggestions

5.1 Findings

The major findings of the study are

- The working of the fish processing unit enhanced employment, especially among the rural women; it improves the life style of the people in Alappad Panchayat.
- It paved the way for the production of diversified products of fish.
- It increases the income of the rural women.
- Women became self-sufficient.
- Through the operation of this unit the rural women are aware of the diversified marketing facilities of fish products and helped to expand the fish business in Alappad Panchayat.
- Empowerment of women through fish processing unit helps to reduce gender inequality, it helps to reduce the poverty among rural poor in Alappad Panchayat.
- The interference of Kudumbashree units helps in the production of hygienic and quality fish products.
- The sustainability of the project attracts more women to start similar units in the Panchayat.

5.2 Suggestions

The important suggestions are

- The Kudumbashree unit has to provide training facilities to each and every worker in the unit for making better quality and more diversified products.
- The Panchayat authority has to provide new markets for the products of the unit. Ensure the participation of these units in various trade fairs.
- The unit has to approach financial institutions for the widening of the unit.
- The unit has to find out another alternative marketing source to sell their products.
- The unit has to resort to publicity measures.

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- 8 "Status of women employed in seafood pre-processing units of Alappuzha, Kerala" study by Dhanya G -Karwar Research Centre of Central Marine Fisheries Research Institute

**Employment and income generation of women
through the fish processing and sales unit for women
groups on Oachira grama Panchayath – A Case
study.**

Questionnaire

1. പേര് : _____
2. വയസ്സ് : _____
3. സാമ്പത്തിക വിഭാഗം : എ.പി.എൽ. ബി.പി.എൽ
4. ജാതി : ജനറൽ. ഒ.ബി.സി.
എസ്.സി. എസ്.ടി
5. വിദ്യാഭ്യാസ നിലവാരം : പത്താംതരത്തിന് താഴെ
പത്താംതരം
പത്താംതരത്തിന് മുകളിൽ
വിദ്യാഭ്യാസം ഇല്ല.
6. താങ്കൾ പരമ്പരാഗത മത്സ്യതൊഴിലാളി വിഭാഗത്തിൽപ്പെടുന്ന
ആളാണോ? : അതെ. അല്ല.
7. മത്സ്യസംസ്കരണയൂണിറ്റിന് ആവശ്യമായ മത്സ്യം എപ്പോഴും
ലഭ്യമാണോ? : ആണ്. അല്ല.
8. മത്സ്യവിപണനം എല്ലാ ദിവസവും നടക്കുന്നുണ്ടോ?
: ഉണ്ട്. ഇല്ല.
9. മത്സ്യസംസ്കരണ യൂണിറ്റ് വന്നതോടെ താങ്കളുടെ
തൊഴിലില്ലായ്മയ്ക്ക് പരിഹാരമായോ?
: അതെ. അല്ല.
10. ഈ യൂണിറ്റ് വന്നതോടെ വരുമാന വർദ്ധനവ് ഉണ്ടായോ?
: ഉണ്ട്. ഇല്ല.

11. വരുമാനത്തിൽ എത്ര വർദ്ധനവ് ഉണ്ടായി.
 : 1000ത്തിൽ താഴെ
 1000 - 1500, 1500-2000,
 2000- 2500, 2500- 3000
 3000ത്തിന് മുകളിൽ.
12. യൂണിറ്റ് പ്രവർത്തിക്കാൻ തുടങ്ങിയത് മുതൽ ജീവിതനിലവാരം മുമ്പത്തേക്കാൾ മെച്ചപ്പെട്ടോ?
 : അതെ. അല്ല.
13. ഈ യൂണിറ്റിൽ ഉപോൽപ്പന്നങ്ങൾ ഉണ്ടാക്കുന്നുണ്ടോ?.
 ഉണ്ടെങ്കിൽ ഏതെല്ലാം?.
14. താങ്കൾക്ക് ഏതെങ്കിലും തരത്തിലുള്ള വൈകല്യം ഉണ്ടോ? .
 : ഉണ്ട്. ഇല്ല.
15. മത്സ്യവിപണനം എവിടെയൊക്കെയാണ് നടത്തുന്നത്?
16. ഇതല്ലാതെ മറ്റ് എന്തെങ്കിലും തൊഴിലും വരുമാനവും ഉണ്ടോ?
 : ഉണ്ട്. ഇല്ല.
17. യൂണിറ്റിൽ നിന്നും ലഭിക്കുന്ന വരുമാനം എന്തിനൊക്കെ ഉപയോഗിക്കുന്നു?
 :
18. യൂണിറ്റിന്റെ വിപുലീകരണത്തിന് ശ്രമിക്കുന്നുണ്ടോ ?
 : ഉണ്ട്. ഇല്ല.

ഒപ്പ്.