IMPACT OF INTEGRATED MARINE FISHERIES DEVELOPMENT PROJECT AMONG THE ARTISANAL FISHERMEN IN KERALA

Thesis submitted to
the Cochin University of Science & Technology
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Doctor of Philosophy
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By

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Contents

Certificate

Certified that the thesis **"The Impact of Integrated Marine Fisheries Development Project Among the Artisanal Fishermen in Kerala"** is the record of bonafide research carried out by **SHAJAHAN S**, under my supervision. The thesis is worth submitting for the Degree of Doctor of Philosophy under the faculty of Social science.

Cochin
19-06-1997

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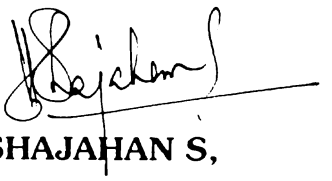
Declaration

I declare that this thesis **"The Impact of Integrated Marine Fisheries Development Project Among the Artisanal Fishermen in Kerala"** is the record of bonafide research work carried out by me under the supervision of Prof.N.Ranganathan, School of Management Stuidies, CUSAT, Cochin-22. I further declare that this thesis has not previously formed the basis for the award of any Degree, Diploma, Associateship, Fellowship or other similar title of recognition.



SHAJAHAN S,

Cochin,
19.06.97.

Acknowledgement

The idea of the study was conceived when the scholar joined in the College of Fisheries, Kerala Agricultural University as a student of B.F.Sc. in 1983. Over a period of forteen years I had interacted with fishermen as an extension worker, social reformer, technologist and policy maker. Despite various government initiatives, I felt very sorry about the sad plight of this most neglected section in Kerala's society. Hence I deeply felt the need for an in-depth study for the upliftment of this sector of the society. Hence the study.

I wish to place on record my sincere thanks to Mr.T.K.Ramakrishnan, Hon.ble Minister for Fisheries, Govt.of Kerala , Mr. Thomas Issac, Member, Plannig Board Govt. of Kerala , Mr. Ashish Kumar Singh I.A.S ,M.D KTDC Ltd. and the unstinted co-operation extended by senior I.A.S officers, Project Officers, Officers of MATSYAFED and NCDC for extending their whole hearted support at various stages of the study.

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My sincere thanks to University Grants Commission for providing me the Fellowship and financial assistance rendered to this work.

Here I present this doctoral thesis for the glory of God and the service of humanity

With thanks to one and all.

LIST OF TABLES

LIST OF GRAPHS

LIST OF EXHIBITS

LIST OF ANNEXURES

INTRODUCTION

1.1 The fisheries sector in Kerala assumes special significance as it is one of the most important sources for protein and contributes a dominant share of foreign exchange earnings.

1.2 Fishing is the source of living for 7.7 lakh of marine fishermen in the State which constitutes 2.6 per cent of the population. As much as 37 per cent of the fishermen population in the country are in Kerala and their contribution to marine exports is around Rs.850 crore in terms of foreign exchange.

1.3 The nature of artisanal fishing as an economic activity is unique because of low risk bearing capability of the fishermen and their very low economic status, high capital and operational expenses, uncertainty of returns and the peculiarities of the produce. Besides, the artisanal fishermen lack strong organisational support for infrastructure,credit, marketing and technological innovations. In the absence of such institutions for these purposes, the fishermen have been exploited by various interest groups over the years.

1.4 The two major changes that has taken place in the fishing industry were the mechanisation and the motorisation of fishing crafts. The introduction of large mechanised boats and the programme of motorisation of traditional craft with OutBoard Motors has brought about considerable improvement in the efficiency of craft and gear.But even during the period of heavy mechanisation, the traditional fishermen contributed more than 70% of the total landings in the State. However during the subsequent years mechanised sector dominated over traditional sector with more than 60% of the total landings and the share of traditional sector came down substantially .

1.5 Though the mechanisation programme had contributed to the development of an export sector, the benefits of that had never percolated down to the traditional fishermen. The motorisation programme had also resulted in substantial increase in the cost of investment and operation which were beyond their affordable levels. As a result, the ownership of assets were invariably vested with middlemen and fishermen had been reduced to wage-earners.

1.6 Out of 7.7 lakh fishermen population , there are around 1.70 lakh active fishermen. A significant number of the non-active fishermen are also involved in the fish trade. Around 90% of the active fishermen are operating with artisanal crafts (Annexure 3).

1.7 Over the years, fishing in the marine sector has become more and more uneconomic and the fishing effort itself is on the decline.Inspite of their hefty contribution to the economy, the fisherfolk remain economically one of the weakest sections in Kerala's society. In a State, renowned the world over for the best physical quality of life indices, the fisher folk stands out as an island of poverty, with perpectual struggle for existence.

1.8 The average production per fisherman operating in the artisanal sector was 3.05 tonnes in 1969. This figure was reduced to 1.29 tonnes in 1980 and further to 0.29 tonnes in 1989. The per capita availability of inshore area for fishermen in Kerala is only around 10 hectares against the national average of 166 hecters.

1.9 With the application of intermediate technology,fish landings were increased and the catch-per - unit effort was diminished. During 1951- '55, marine fish landings in the State constituted 1.31 lakh tonnes which steadily went up to 4.48 lakh tonnes in 1973. Thereafter it declined to 2.74 lakh tonnes in 1981. However, from 1982 onwards it showed a rising trend recording 3.85 lakh tonnes in 1983 ; 1984 witnessed a further increase and the production went up to 4.2 lakh tonnes. With slight fluctuations in the next few years,1994-95 recorded a maximum production of 5.74 lakh tonnes.

1.10 As a result of heavy landings, the beaches were flooded with fish during the season and fishermen were forced to sell their catch at throw-away prices. This was mainly due to the absence of an alternative marketing system which could protect their interests. Again, institutional credit was insufficient for their needs and often not responsive to their sudden and unexpected requirements.The development strategy hitherto followed for the fisheries industry has so far not benefitted the traditional fishermen in the State significantly. This was because the various interventions launched for fisheries development had not considered the overall development of the artisanal fishermen .

Socio-economic conditions

1.11 Though the traditional sector forms the backbone of the fisheries sector in Kerala ,most of the fishermen lead a mere subsistance level living. The percentage distribution of households by broad income class is given in Table 1.1. It can be seen that about 70% of the households have earnings less than Rs.5000/- per annum. When compared to the State average , the fishermen households in Thiruvanantha puram, Alappuzha and Kozhikode are poorer, since, in these areas more than 45% of the households fall below the income level of Rs.3000/-.

1.12 The percentage of households having an annual income of more than Rs.10,000/- is only 5.14. This is an indication of the extent of poverty among the fishermen households in Kerala. The rate of literacy in Kerala is one of the highest (90.42%) but that of the fisherfolk is lower, especially so among fisherwomen.In terms of density of population, the State average is 710 per square K.M, but that of the coastal belt is 1000 per square K.M and above. The percentage of dependents is 79.56 against the all India average of 76.91. The above statistics clearly show that artisanal fishermen are one of the weakest sections in Kerala's society.

Table:1.1

PERCENTAGE DISTRIBUTION OF MARINE FISHERMEN HOUSEHOLDS AS PER THEIR ANNUAL INCOME

Sl. No.	District	Annual income (Rs.) Upto 1000	1001 to 3000	3001 to 5000	5001 to 7000	7001 to 10,000	10001 to 20,000
1.	Thiruvananthapuram	7.00	53.00	28.88	7.61	2.83	0.68
2.	Kollam	0.58	31.03	36.20	18.35	9.59	4.25
3.	Alappuzha	4.00	43.15	34.13	12.53	5.06	1.13
4.	Ernakulam	0.35	35.88	40.07	15.75	6.22	1.73
5.	Thrissur	7.17	42.15	27.21	9.85	10.46	3.16
6.	Malappuram	0.40	12.15	38.68	20.25	16.46	12.06
7.	Kozhikode	5.38	48.00	26.90	11.09	5.83	2.80
8.	Kannur	3.90	32.40	30.59	17.27	9.55	6.29
9.	Kasargode	2.05	64.00	26.33	5.37	0.93	1.32
	Total	3.54	34.80	31.56	13.43	11.53	5.14

Source:

Directorate of Fisheries: Marine Fisheries Of Kerala at a Glance 1995

Income and expenditure pattern

1.13 A study on the gross income and pattern of expenditure of artisanal fishermen conducted by MATSYAFED in 1985, indicated that their net earnings was only 10% of the catch value. Most of the fishermen were indebted to middlemen and their level of indebtedness ranged from Rs.10,000 to Rs.25,000 per group. These liabilities resulted in perpectually high interest charges which inturn, took away their income substantially.

1.14 According to 1991 census, the average size of marine fisherman family is 7.0 and the average number of earning members is 1.31 per family and 79.51% of the fishermen depend on 20.49% who form the earning class. Their earning and spending habits depend on the vagaries of the catch. The beach price is hardly 35% of the consumer price. The problems of malnutrition and related deficiencies and diseases are rampant among the fishermen population.

1.15 A study conducted by the Council for Social Develop ment(1991) confirmed the suitability of Fisheries Co-operatives "as a tool for promoting the interests of fishermen in India". After considering the above state of affairs, policy makers of the State adopted an integrated approach to fisheries development encompassing the entire gamut of activities starting from production to marketing. Hence Govt.of Kerala in collaboration with National Co-operative Development Corporation New Delhi , jointly introduced Integrated Marine Fisheries Development Project in Kerala with an outlay of more than Rs.6000 lakh over a period of 20 years.

1.16 In this context, the scholar made an attempt to study the impact of Integrated Marine Fisheries Development Project among artisanal marine fishermen in Kerala. The forteen years of experience of the scholar coupled with the opinions of the Fisheries subject experts helped him to conclude the study in nine chapters.

CHAPTER - II

EXECUTIVE SYNOPSIS

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2.1 The artisanal fishing lacks organisational support for credit, marketing, infrastructure and technological innovations. In the absence of such facilities and resources, they are mostly exploited by middlemen. The development strategy followed hitherto had produced mixed results often adversely affecting artisanal fishing. In the light of above circumstances, this Research scholar has made an attempt to study the impact of the Integrated Marine Fisheries Development Project (IMFDP) among the artisanal fishermen in Kerala.

Methodology and data collection

2.2 The study was conducted in four stages spreading over a period of 12 months in 1994. Judgemental sampling was resorted to the study. Specific criteria were choosen to include various elements in the fishing industry as the sample population.

2.3 In the first stage,data were collected among the beneficiaries and non-beneficiaries of IMFDP through project officers of MATSYAFED from thirty selected Fisheries Co-operative Societies\ Fishing villages.

2.4 The study covered 842 small groups and 237 large groups in Kerala. Among project beneficiaries, small groups constituted 738 samples and large groups, 178 samples. Among the non-beneficiaries, 104 small groups and 59 large groups were included in the study. Again,the study covered 460 partially assisted and 456 fully assisted fishing groups in Kerala.

2.5 In the second round,the scholar contacted 250 fishermen from 30 villages personally for collecting information on their perception regarding the co-operativeness and group ownership on account of the project.

2.6 In the third stage, the scholar conducted a study among the channel members of fish marketing in Kerala. About 120 respondents were interviewed from ten major landing centres in Kerala.

2.7 About 250 household consumers were selected for the fourth stage of the study and data collection was carried out with the help of an interview schedule. Respondents were selected from Thiruvananthapuram,Ernakulam and Kozhikkode for the survey.

MAJOR FINDINGS:

2.8 While analysing the effect of finance on the net income of fishermen it could be seen that the incremental income for an employee-owner, or the project beneficiary, was estimated as Rs.4207.90. Hence the incremental income in aggregate accruing to 21930 beneficiaries over their employees was estimated as Rs.923 lakhs per year.

2.9 The employee-owners of the project-assisted groups earned Rs.9018.95 p.a. more than, that earned by those of fishing groups assisted by private financing sources. Hence on an average, project beneficiaries earned Rs.1978 lakhs per year more than the non beneficiaries.

2.10 The Average Net Per Capita Income for both benefici -aries and non-beneficiaries was higher in Thiruvanan -thapuram. The beneficiaries accrued Rs.857.70 lakhs per year in Thiruvananthapuram followed by Alappuzha with Rs.715.20 lakhs. On an average, 2193 beneficiaries of the project had accrued a net income of Rs.4258.25 lakhs per annum in Kerala.

2.11 The employees of the fishing groups assisted by the project earned Rs.2887.10 per year more than the non -beneficiaries . A comparison of Average Net Per Capita Income of employee owners and employees of fishing groups

assisted by other financing sources revealed that employee owners earn Rs.1924 less than that of their employees.

2.12 Employee-owners of fully assisted groups earned Rs.11,993.40 p.a. more than partially assisted groups. Similarly the employees of fully assisted groups earned Rs.1752.20 p.a. more than those of the partially assisted groups. Employee - owners of fully assisted groups earned Rs.9328.50 p.a. more than the employees. But the average net per capita income of employee-owners of partially assisted groups was Rs.912.70 p.a. less than that of their employees.

2.13 While comparing the influence of complete assistance over partial assistance across districts, it was observed that beneficiaries from Thiruvananthapuram earned the most followed by Kollam and Alappuzha.

2.14 The Average Gross earnings of the groups having OutBoard Motors was Rs.1,39,000 and that of groups not having OutBoard Motors was Rs.40,711. The employee-owners of the fishing groups having OutBoard Motors in their crafts earned Rs.18,480 p.a. and that of the non-OutBoard Motor groups was only Rs.11,445.

2.15 The average gross group earnings of the small group were the highest during September-December 1994 across the season. On an average, beneficiary groups of the project earned Rs.51,000 p.a. more than non-beneficiaries.

2.16 The variation in the average gross earnings did not follow the same pattern for the large group. The highest earnings were recorded in June -August 1994 across the season. The beneficiaries of the project earned Rs.2.37 lakhs p.a. more than by non beneficiaries. On an average, beneficiaries of the project earned Rs.1.63 lakhs and Rs.8.Ø9 lakhs p.a. when they were in small groups, and in large groups, respectively.

2.17 The area comprised of the districts of Thiruvananthapuram, Kollam Alappuzha and Ernakulam presented better utilisation of various provisions offered under the project. This is further supported by the findings of the study in terms of the higher average net per capita income of the group. The plank-built canoes with 25 or 4Ø HP OutBoard Motors, ringseines/anchovy nets were found to be most effective.

2.18 The average beach price of fish in 1984 was only Rs.1.9Ø per Kg. and in 1994 the price went up to Rs.9.5Ø per Kg. This could be attributed to a general rise in prices, market conditions and to some extent , to the better bargaining power of the group.

2.19 The beach level auction system introduced by MATSYAFED had helped the beneficiaries to fetch a reasonable price for their produce. Studies showed that the

share of beach level price to consumer beneficiaries had gone up from 30% in 1985 to 60% in 1994.

2.20 Since the formation of Fisheries Co-operatives the beneficiaries were assured of the money from their catch through auction system. Formerly they had to forsake some amount as trade discount in the process of bargaining.

2.21 However, MATSYAFED failed to introduce a fish marketing that was being auctioned through the project appointed auctioneers.It is observed that many of the beneficiaries did not auction their catch through the project appointed auctioneers.

2.22 The survey conducted among the fishermen showed that 31% of the beneficiaries of the project borrowed money also from money lenders. The majority of the respondents utilised this fund for clearing their debts and for acquiring fishing assets.

2.23 The name " MATSYAFED" for the average fishermen was synonymous with credit. The level of member satisfaction of Co-operatives were measured on a 5 point scale and it was found that 59% of the respondent members were satisfied with the activities of the Societies.

2.24 The study revealed that the most important needs of fishermen were related to credit and marketing. Without marketing linkages effective credit management was not possible. The species composition of marine landings, nature of the commodity, scattered landings in very small quantities, consumer preferences, nature of the commodity and market conditions necessitated a totally different approach for the marketing of fish in Kerala. Hence the scholar suggested ways and means of tackling this situation on a broad perspective.

2.25 The scholar conducted a study among the marketing intermediaries at selected centres which revealed that wholesalers were exploiting the other members for their benefit. Further, wholesalers were playing a crucial role in making up the deficit in the supply of fish in Kerala. About 20% of the wholesalers procured fish from the neigh bouring States on a regular basis. The intermediaries in the north handled about 20 to 50 percentage more than the quantity handled by the intermediaries of the South. Again, consumer price for fish in the north was 10% more than that in the South. About 75% of the vendors procured fish from beach auctions. The fluctuation in the consumer price between the lean and flush seasons is as wide as 50 to 100%.

2.26 The study conducted among the household consumers revealed the fact that hygiene and freshness were the most important attributes for the processed fishery product. The consumers preferred to pay more for better quality product. About 35% of the consumers of frozen products were unhappy on the quality of fish presently available from the cold storages. The high income group and the middle income group were not sensitive to the price changes. It was found that the middle income group having a monthly income between Rs.3001 and Rs.4000 was the most price-sensitive segment.

2.27 The need for a "decentralised" system necessitated the evolution of strong Primary Co-operative Societies with active involvement of fishermen. The scholar suggested a system of appraising the performance of Co-operatives.

2.28 Because of the limitation in the handling and storage facilities, fishermen have very limited power for bargaining during peak landings. Hence the scholar suggested to set up cold storages at major landing centres. The selection of location for market intervention could be done after considering factors like volume of catch landed, species composition, coverage of co-operative societies, availability of power, proximity to the consumer markets and the level of indebtedness of fishermen in the area.

CHAPTER - III

REVIEW OF LITERATURE

3.1 The scholar made an extensive survey on various literature available on the subject with a view to construct a theoretical framework for the study. Even though, very few literature was availble on the subject ,the scholar made an attempt to classify them under four different heads such as :

(a) Literature on Fisheries management

(b) Theories of Fisheries management

(c) Literature on Fisheries Co-operatives and

(d) Literature on Fisheries development in Kerala

(a) Literature on Fisheries Management

3.2 The term 'fisheries management' envisaged to include all aspects of theory, policy, programmes and strategies to realise the different goals of management on the basis of information and presumptions made at different stages of development of the industry.

3.3 The Expert Consultation Report of Food and Agricultural Organisation,United Nations, Strategies for fisheries development noted that until then fisheries development had stressed the aspect of increasing production and tended to ignore the more global approach

of national development which could be defined as a constant improvement of the well being of the entire population, on the basis of their full participation in the process of development and a fair distribution of the benefits deriving from them.

3.4 The Food and Agriculture Organisation, as the watch-dog of international developments in fisheries has been closely monitoring the developments in fisheries in the third world countries . One of the early publications of the FAO, 'Economics of Fisheries edited by Ralph Turvey and Jack Wiseman in 1957 brought out nine articles about fisheries management. One of the articles entitled 'Special Problems of Fisheries in Poor Countries' by E.S.Kirby and E.F.Szczepanik highlighted the various problems of fisheries development in less developed countries.

3.5 In 1982, Theodore Panayotou brought out a monograph, 'Management Concepts for Small scale Fisheries:Economic and Social Aspects' in which he had suggested a strategy, for upgrading small scale fisheries through: (a) resource allocation and encouragement of self management; (b)development of the appropriate environment for a full and equitable utilisation of the fishery potential, and (c) development of alternative/supplementary employment opportunities'.

3.6 A review of the role and strategy of fisheries management as suggested by FAO, specifically looked at the following major issues:
(a) the role of the public sector in promoting fisheries development, (b) determination of objectives for fisheries development:conflicts and constraints, (c) fish supplies for domestic and external markets, (d) the role of different production systems in strategies for fisheries development, (e) the role of small scale fisheries, and (f) the role of research and extension work in fisheries development.

3.7 In the integrated approach of national and fisheries planning, as suggested by FAO, the development targets of the fisheries sector should be guided by four criteria of global rationality, i.e. social desirability, economic feasibility, ecological suitability, and efficient use of energy. Hence Fisheries development must therefore, be viewed as a multi dimensional process having economic (increase in output or growth), socio-political (wealth distribution) and ecological objectives (Korakandy).

3.8 According to Kurien if the fishermen's organisations were to have a more formalised roles in fishing management, they would require more empathy and support from national government, national fishery institutions, fish consumers, voluntary association and international organisations.

3.9 One of the papers entitled, 'The role of Community Organisations in Fishery Management;Discussion Guide by the FAO Secretariate,suggested principles of participatory approaches in fishery management. Further, they had assumed that the fishermen themselves to be planners, implementers and evaluators of the activities undertaken.

While refering to the objectives of community based management FAO secretariate noted that broadly, the experiences indicated that there were three general objectives sought by communities for the management of fishery resources:

(a) Enhancement of total yields or revenues.

(b) Increase in the net benefits obtained for the resources and

(c) The achievement of stability in the community or the reduction of conflict.

3.10 The above review of literature clearly pointed out the active role played by Food and Agricultural Organisation (FAO) for promoting small scale fisheries in the less developed countries;

(b)Theories of Fisheries management

Biological theory

3.11 A formal theory of fisheries management based on biological parametres, was formulated by Miller B.Schaefer in 1954. The Schaefer model in its simplest form presented the relationship between sustainable yield, population and fishing effect. Biological theory of fishieries management has been further sophisticated by incorporating dynamic variables like interaction between recruitment, individual growth, mortality, predation and so on; and their impact on catch and population by Beverter and Host and Gulland.

The Neo Classical theory of Economist

3.12 Francis T. Christy Jr. and A.D.Scott analysed the working of common property system in marine fisheries and found it less than optimum in the long run. They argued that in the common property system with no restrictions on entry, the fishing effort would continue to increase until there was any true profit to be shared and that combined with the prevailing natural limits to the productivity (growth) of the stock would lead to the taking of more fish from the stock and the resulting fall in the sustainable yield from the stock.

The Modern Theory of Fisheries Management

3.13 The modern theory of fisheries management really had its beginning in the plan documents of the centrally planned economies of Communist or Socialist States. The basic tenet of planning in these countries had been democratic or decentralised decision making and central direction. The national economic plans of India and several other third world countries adhering to the plan concept are still following this model for the development.

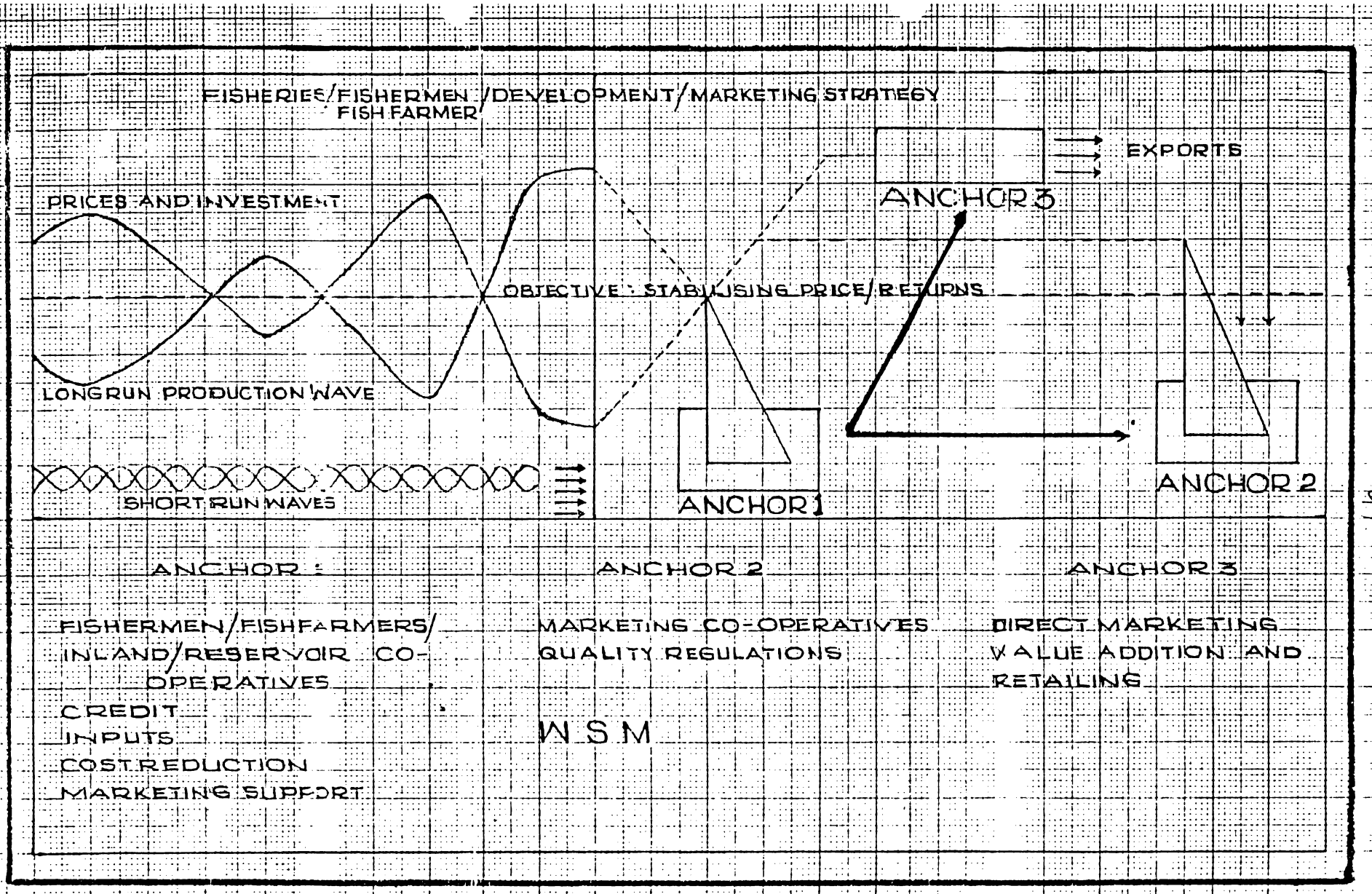
Global Theory of Fisheries Management

3.14 The concept of global fisheries management has emphasised the increased role of community organisation and need for adopting participatory management in the development process. This has been further promoted by the FAO taking into consideration, ecological, economic, social, cultural, political and other characteristics of the small scale fisheries of the developing countries.

Fisheries development model under Kerala perspective

3.15 There was a growing awareness among a number of developing countries that models conceived and imple mented in the past few decades were illmatched to local conditions. Some of them were uncritically transposed from the industrialised nations where high technology and capital were abundant. Insufficient attention had been given to the assessment of local condtions and to the potential, as well as to the constraints, for fisheries development. Hence the scholar considered an emperical model which would consider the peculiar nature of artisanal marine fisheries sector in Kerala .

3.16 The model proposed by Manuel J (1991) examined fisheries sector from a different perspective, based on experiences with the development approach now being adopted in Kerala. According to him the impact of production oriented approaches as purely output oriented marketing can have limited relevance in the context of Kerala. Thus all possible measures to optimise the effort, reduction in capital and operational expenses along with marketing systems for inputs as well as output was essen tial to stabilise the returns to fishermen which was represented by the Anchors 1,2 & 3.


FISHERIES/FISHERMEN /DEVELOPMENT/MARKETING STRATEGY
FISH FARMER
EXPORTS
PRICES AND INVESTMENT
ANCHOR 3
OBJECTIVE : STABILISING PRICE/RETURNS
LONG RUN PRODUCTION WAVE
SHORT RUN WAVES
ANCHOR 1
ANCHOR 2
ANCHOR :
FISHERMEN/FISHFARMERS/ INLAND/RESERVOIR CO-OPERATIVES
CREDIT
INPUTS
COST REDUCTION
MARKETING SUPPORT
ANCHOR 2
MARKETING CO-OPERATIVES
QUALITY REGULATIONS
WSM
ANCHOR 3
DIRECT MARKETING
VALUE ADDITION AND RETAILING

3.17 The emphasis at the producer level would be for cost reduction, optimising effort, systematic and planned investments in inputs, bulk purchase of inputs to achieve economies of scale, ensuring availability of credit for inputs and short term requirements. Minimal infrastructure for storage and enhancing the holding capacity within the narrow margins of feasibility were also considered at that level. At anchor 2 where the physical flows aggregate to meet requirements of particular markets, infrastructural support of a higher order could be sustained. He also suggest necessity of extending the organisational structure to small marketing intermediaries. With better linkages at those two levels linkages with the processing sector would also become possible .According to him,the possibility of even establishing direct linkages to processors and wholesale markets also emerged in the model.

3.18 The model aimed at supplementing and supporting the weaker links in the marketing chain.The approach suggest ed by him boils down to reducing the dependence of fishermen on the market through professionally managed organisations of their own.

3.19 The above models explained various aspects of modern fisheries management and the scholar has adopted a holistic approach to the issues after considering their dynamic relations with one another.

(b) **Literature on Fisheries Co-operatives**

3.2Ø While reviewing the story of Fisheries Co-operatives in the world,it is clearly understood that Asia has produced the best Co-operatives for the artisanal fishermen. This may be due to examples of Japan and Korea and in part due to the Colonial experiences with Co-operatives in the Indian sub Continent.Both influences have provided acceptance on co-operative principle.

3.21 In Japan, however, where fishing has always been an important industry, Co-operative forms of fishermen's associations can be traced back to the century and fishermen to form communities for the management and Zengyoren - the National Federation of Fisheries Co-operatives is now the most powerful fisheries organisation .

3.22 A similar success story comes form Korea, where fishermens' organizations have been setup based on economic efficiency successfully under the National Federation of Fisheries Co-operative.

3.23 In the non-industrialised countries, the main impetus for Co-operative development and for Fisheries Co-operatives in particular came in the early 197Ø's. Fisheries Co-operatives were set up and used as a channel

for funds in order to reach artisanal fishermen. The intellectual climate of fisheries development in the third world did not allow sufficient consideration to the social implications of Fisheries Co-operatives. In this respect, fisheries probably lagged behind developments in the Agricultural sector (Emmerson 1980).

3.24 In the case of Industrialised countries, outstanding examples can taken from Australia and Canada. In the European Economic Communities, two-third of fisheries come under Co-operative Organisations (ICA 1979).

3.25 Among Asian countries, Indonesia and Malaysia illustrate two countries where there has been considerable government intervention and support, for the Co-operatives. In Malaysia, an Umbrella fisheries Organisations, Majuikan provides finance and management advice to the Co-operatives. In Indonesia, the major government effort appears to be in the promotion of the KUDS (rural Cooperatives) which are mostly whole community based than occupationally based. In India and Bangladesh, there were many bogus societies, So the true Co-operative picture was over estimated.(Kurien) . Sri Lanka is an example of a country where much of the local marketing of fish used to be undertaken fairly competently by the Co-operative movement(Jayasurya,1980).

3.26 Among African countries, Egypt, Kenya, Ghana and Nigeria stand out as having the most cooperatives experience. In Kenya a quarter of the fishermen come within the Co-operative movement; the most successful Cooperatives are reported to be at lake Turkana (Jul Larsen) and at Lamu (Okidi 1979). In Egypt, over 85% of the fish marketed is caught by Fisheries Cooperatives and the most successful Societies are based at Alexandria, the Red Sea and on Lake Aswan.

3.27 The Caribbean and Latin American countries have had some remarkable successes in Fisheries Cooperatives. Belize and St.Lucia are prime examples where Co-operatives have shown tremendous success.

3.28 A review of literature on Fisheries Co-operatives has clearly pointed out that Societies could be managed professionally with little assistance from the government.

(d) **Fisheries development in Kerala:**

3.29 Kerala has a long history of organised Fisheries Co-operatives since 1935. Before independence little progress was made in the socio-economic conditions of fishermen. However, after independence the fisheries sector in Kerala witnessed rapid development. Kerala's five year plans were milestones in the States'economic progress for intensive and extensive use of the resources.

By and large, fisheries development under the five year plans in Kerala favoured mechanised fishing and supporting facilities for augmenting fish production and fishermen's income (Galtung, 1969).

3.30 In 1968 Klausen had highlighted the need for a comprehensive project for fisheries development. In 1969 Asari critically analysed the impact of Indo-Norvegian project on the artisanal sector in Kerala

3.31 In 1978 Mathur focussed attention on the fish ermen community , especially the mappila fisher folk in Kerala.

3.32 Kurien presented an overview of the organisation of fishing, the trends in production and the manner in which the output had been shared between different groups and regions. Though the study was focused on production, it also analysed marketing and the effect of interrelations between ownership, production, credit and marketing (Kurien, 1978a).

3.33 Platteau et.al (1979) explained the fishing technology, ownership pattern, interlinkage of credit and marketing practices in a traditional fishing village of Purakkad.

3.34 William (1980) examined the main characteristics of artisanal fisheries including institutional support in Kerala. Kurien, (1980) presented a critical analysis of the fishery co-operatives and their impact on the small operators.

3.35 Kurien(1984) made an attempt to analyse the impact of ecological, technological, socio-cultural and political factors on the fishery economy of Kerala.

3.36 In 1985 Kurien highlighted the impact of Norvegian technical assistance project on the socio economic fabric of arisanal marine fishermen in Kerala.

3.37 Babu Paul Committee made a fair attempt to cross check the marine resources management conservation methods with the experience and considered opinions of fishermen and fishery scientists in suggesting various needs for conservation of marine resources and allied matters (Babu Paul Commission Report, 1982).

3.38 Kalwar Commission, a second in the series on Kerala's marine fisheries conservation, showed that level of exploitation of inshore resources in Kerala was near the allowable level and any further effort would lead to overfishing (Kalwar Commission Report, 1985)

3.39 Krishnakumar suggested a development strategy and an action programme for fisheries sector in Kerala with the object of carrying the sector to a take off stage of orderly development (Krishnakumar, 1980).

3.40 Indian Institute of Management, Ahmedabad conducted a study on the marketing of fresh fish in Kerala in 1986. The study analysed in depth, various role played by inter mediaries in the distribution of fresh fish in Kerala.

3.41 Owing to the lack of authentic literature, the scholar followed mostly the expert opinion of the fisheries scientists, management consultants and policy makers coupled with status report of various agencies and field level observations made by him during the course of the study.

CHAPTER :IV

AN OVERVIEW OF FISHERIES OPERATIONS,FISHERIES CO-OPERATIVES AND FISH MARKETING IN KERALA

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Profile of Fisheries operations:

4.1 The fisherman is the primary producer of fish. Typically, he auctions his catch through an auctioneer at the landing centre. Fishermen usually operate in groups of sizes varying from 2 or 3 , to 30 or 40 (though in some centres eg. Vizhinjam in Thiruvananthapuram district, there are also one member units playing on Kattamarams).

4.2 The share of the labourers in the non-mechanised sector is higher than that of the mechanised sector, which reflects a more egalitarian nature of distribution of the proceeds of the catch in the non-mechanised sector.
Even though fishing activity is a joint venture, two types of ownership patterns exist in the means of production-viz-individual ownership and collective ownership.Owner ship pattern is generally based on the share of capital invested for buying a craft and gear.

4.3 Based on the labour requirements of the particular type ofgear used and the available manpower of each household owner operator may or may not need to recruit additional crew members. Seasonal nature of fisheries demands for diversity of gear to enable year-round operations. It also gives pressure to the owner operators to work as crewmen

4.4 The system of sharing determines the distribution of proceeds from catch to labour and capital.The division of proceeds between the owner and crew is done only after deducting the operational expenses. The operational expenses vary from gear to gear and also from craft to craft, as does the particular demand of the work involved. It is assumed that in non-mechanised sector the owners get 40 per cent share of the gross earnings. This is because the operational expenses are very low in this sector.

4.5 On an average, in the flush season, an individual fisherman's catch is around 40 to 50 kgs of fish per day. In the lean season, this figure is typically around 10 to 15 kgs though on some days, there may be no catch at all.

4.6 Typically, the fisherman gets between 35.0% and 70.0% of consumer price for his catch. This is because of varying size of distribution network and proximity of the consumers market from landing centre.

4.7 In Thiruvananthapuram district where production is dispersed due to large numbers of Kattamaram fishing units, the marketing chain consists of fish vendors, fishermen and the final consumer. Hence the fisherman receives a high percentage of consumer price for his produce. However in northern districts where fish has to be transported across long distances, the price received by the fishermen is much lower than the market price. On an average, the fishermen receive around 35.0% of consumer price (MATSYAFED).

SOCIO RELIGIOUS PHENOMENON

4.8 Over 40.0% of the fishermen population in the State are Hindus, while Muslims and Christians constitute 26.0% and 34.0% respectively. Christian fishermen are found in certain pockets in Thiruvananthapuram and Alappuzha districts while Muslims are mostly in Malappuram, Kozhikkode and Kannur districts.

4.9 Among the fishermen belonging to Christian and Muslim communities, majority of them contribute 5 % of their earnings to religious institutions such as the local Church or Mosque. This amount is used by the religious institution as Development Fund for the community. In some cases, the church \ mosque has been known to appoint auctioneers for fishermen of their community.

There appears to be some degree of ostracism of fishermen who do not contribute a portion of their earnings to their religious institutions.

FISHING CRAFTS IN KERALA:

4.10 The marine fishing industry in Kerala depends much on the mechanised fishing vessels which have contributed about 60 percent of the total marine landings in the State. There were 4206 mechanised crafts in Kerala during 1994-95 ; these included trawlers, gillnetters and purse-eners. During 1985-86 about 3213 mechanised boats were operated in the coast of Kerala, which had registered a growth of 31% over a period of 10 years. Disticts of Ernakulam and Kollam had a high concentration of mechanised crafts in Kerala.

4.11 During 1994-95 there were 45000 artisanal crafts in Kerala; out of which 17,500 were motorised The population of country craft in Kerala had witnessed an unprecedented growth of 66% over a span of 23 years (Graph 4.1). This was mainly on account of increase in the number of plank built canoes in Kerala. The number of plank built canoes were only 4,022 in 1972 ,which had gone upto 15,754 in 1995 (Table 4.1)

Table:4.1

DISTRICTWISE DISTRIBUTION OF COUNTRY CRAFT IN KERALA

District	1972	1977	1980	1990	1995
Thiruvananthapuram	2600	2889	12495	13807	15240
Kollam	3395	3819	2613	3480	4261
Alappuzha	3300	4322	2177	3636	5152
Ernakulam	4676	3811	1463	2205	2737
Thrissur	1029	1566	1523	2116	2447
Malappuram	1392	1746	2013	3023	4082
Kozhikkode	2892	2427	2194	5141	6265
Kannur	3280	3512	1788	2285	2688
Kasargode	N.A	N.A	N.A.	1818	2946
Total	22564	24092	26266	37511	45818

Sources:

1. Central Marine Fisheries Research Institute, Govt.of India, Census of Fishermen-Fishing Craft, 1980.

2. Govt.of Kerala, Dept.of Fisheries,'Kerala Fisheries: Facts and Figures' 1990.

4.12 Since 1980, dramatic changes have taken place in the artisanal fisheries of Kerala. The early 1980's witnessed a rapid motorisation of the artisanal fleet with the help of imported OutBoard Motors .

4.13 The fishermen started experimenting OutBoard Motors with both craft and gear in an attempt to make motorisation a viable proposition and to cope-up with intensive competition that developed among the artisanal units themselves . The introduction of OutBoard Motors transformed the artisanal sector by reducing the involvement of labour and helped them to explore the deeper waters for fishing. They could also indulge in more voyages and there by increase their Per capita Income. On account of intense competition from the mechanised boats , non-motorised crafts are becoming uneconomical.

4.14 According to SIFSS, there were only 11621 OutBoard Motors in 1991(Table 4.2) . Districts of Alappuzha, Kozhikode and Thiruvananthapuram had more than 50% of the total OutBoard Motors in Kerala .District with high degree motorisation i.e. percentage of motorised craft to total artisanal craft was Alappuzha (69%) followed by Kollam(61%). The lowest degree of motorisation was observed in Thiruvananthapuram District (22%) (Table 4.3)

TABLE:4.2

DISTRIBUTION OF OUTBOARD MOTORS IN KERALA

District	No.
Thiruvananthapuram	1844
Kollam	903
Alappuzha	2019
Ernakulam	470
Thrissur	851
Malappuram	1571
Kozhikode	1995
Kannur	884
Kasargode	1084
Total	11621

Source:SIFFS, Thiruvananthapuram, Census of artisanal marine fishing fleet of Kerala (1991).

TABLE:4.3

DISTRICT-WISE DISTRIBUTION OF COUNTRY CRAFTS IN KERALA (MARINE)

Sl. No.	Name of District	Motorised 1992	Motorised 1995	Non-motorised 1992	Non-motorised 1995
1.	Thiruvananthapuram	2713	3408	11127	11832
2.	Kollam	2058	2588	1614	1673
3.	Alappuzha	2645	3563	1515	1589
4.	Ernakulam	551	792	1844	1945
5.	Thrissur	736	889	1524	1558
6.	Malappuram	981	1427	2501	2655
7.	Kozhikode	1783	2234	3756	4031
8.	Kannur	881	1088	1535	1600
9.	Kasargode	565	1373	1253	1573
	Total	12913	17362	26669	28456

Source:

Directorate of Fisheries: Marine Fisheries Of Kerala at a Glance 1995

4.15 The distribution of various types of traditional craft is not uniform in Kerala. This is largely owing to the concentration of a particular type of production technique in a particular area and to some extent owing to the inequalities in the possession of capital for investment and definit local references (Mathur,1978).

4.16 The place to place change in the types of equipments and their operations depend on factors such as nature of the coastal region, climatic condition, species of fish available, capital at the command of fisherfolk and local culture and traditions (Kurien,1978). Any technological change in the fisheries means change in the craft and gear combinations with a view to increase the output.

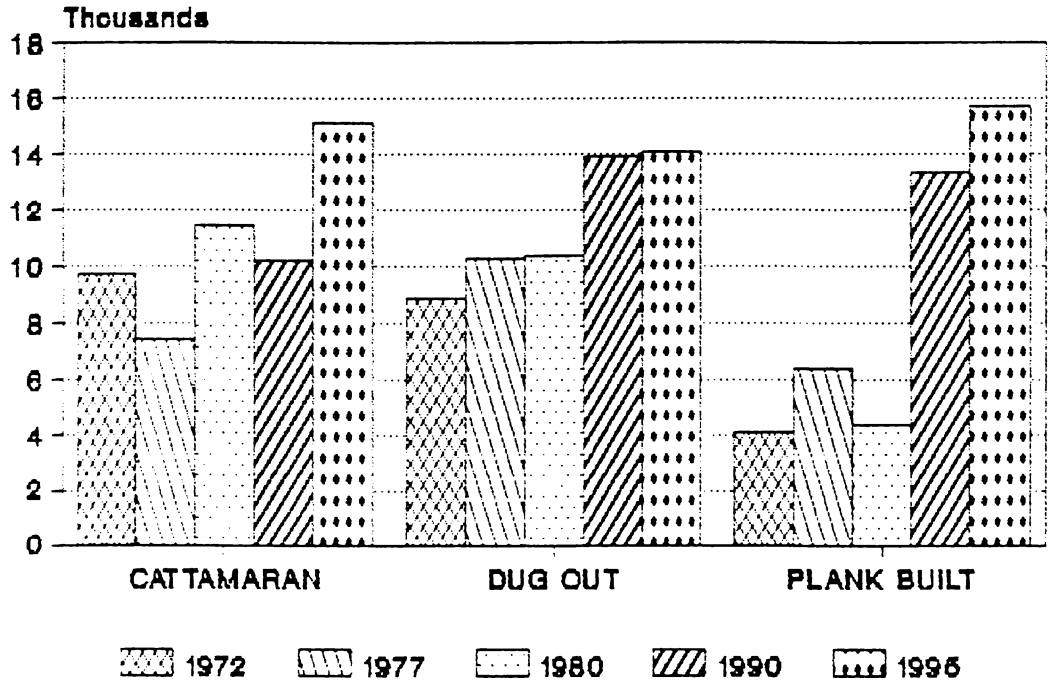
4.17 In Thiruvananthapuram, motorisation of country craft is uneven with large concentration of motorised craft at Vizhinjam. Prevalance of marine plywood boat over plank-built craft is the major feature. However Valiathura, one of the major centres remains largely non-motorised.

4.18 In Kollam, large plank-built craft dominates in the northern part and is characterised by the absence of beach landing. The landing and sorting-cum-consumer centre for the traditional craft is at Neendakara. Over 300 marine plywood boats with OutBoard Motors are operating

40(B)

GRAPH:7.1

COUNTRY CRAFT



between Thangassery and Pallithoram. The mechanised sector has a major impact in the district.

4.19 Alappuzha is considered as the major centre for artisanal fishermen. About 40% of the ringseine units are operating in the coast. Mechanised crafts are allowed to anchor only at Thottappally. Most of the fishermen migrate to the northern districts of Kerala during lean periods.

4.20 Thanguvallam with carrier boat dominates in Ernakulam district. Northern part of Vypeen to Munambam has a high concentration of dug out canoes.Southern part of Ernakulam is considered as the birth place of ring seine. The mechanised sector has had dominant influence in the district.

4.21 The important feature of small scale fisheries in Kozhikode district is the proliferation of small non-motorised dug-out canoes and has accounted for the maximum number of shore seines in the northern part of Kerala. Introduction of ring seine has shown greater convulsions in the local fishery than in other northern districts of Kerala. The presence of mechanised boats is quite strong in the district, with large numbers anchored at Beypore and Puthiyappa.

4.22 In Kasargode, ring seines are operated with the help of three or four large dug-out canoes. Gill net operations are conducted with medium size dug-out canoes. The northern part of the district is well linked with mechanised sectors of Mangalore.

FISHERIES CO-OPERATIVES.

4.23 In Kerala, there has been lots of organisations to help the fishermen and these have come and have gone out of existence. In spite of all the efforts or initiatives taken by the State, it could not make any substantial impact on the overall situation especially in production, credit and marketing structure. In 1981, out of 470 Primary Fisheries co-operatives 78% of them were in the production sector. However proliferation of Primary Co-operatives posed a variety of managerial and operational problems and most of the societies were ineffective in handling the problems of artisanal marine fishermen. Thus the need for a different approach was felt for ensuring the active participation and involvement of artisanal marine fishermen in the working of marine fishermen Co-operatives in Kerala.

4.24 As a result of meaningful action taken by the Government for co-ordinating various Fisheries Co-operatives,number of Primary Co-operative Societies was reduced to 47 in 1985. The Government of Kerala constituted an apex co-operative federation, MATSYAFED (Kerala State Co- operative - Federation for Fisheries Devel opment Limited) which was viewed as a professionally managed Federation of Fisheries Co-operatives in 1985. Again, through MATSYAFED Government has supported the Fisheries Co-operatives in the State and subsequently, the number of Co-operatives has gone up to 113 in 1990. However the number of Marketing Societies was reduced to 3 in 1990 (Table 4.4).

4.25 In the context of artisanal marine fisheries of Kerala, MATSYAFED has set three main aims while constituting Primary Fisheries Co-operative Societies in Kerala. They are as follows:

1. To increase the income of fishermen.
2. To improve the standard of living of the fishermen and their colleagues in associated industries,
3. To increase the supply of animal protein .

Table:4.4

DETAILS OF PRIMARY FISHERIES CO-OPERATIVE SOCIETIES WORKING IN KERALA

Category	No.of Societies/Year 1981	1985	1990
Credit Societies	88	13	17
Production "	368	2	12
Marketing "	14	5	3
MATSYAFED	Nil	27	81
Total	470	47	113

Source:

Govt.of Kerala, Dept.of Fisheries,'Kerala Fisheries: Facts and Figures' 1990.

4.26 The above objectives of the marine Primary Fisheries Co-operative Societies can only be achieved by enhancing the earnings of fishermen through :

1. Reducing input cost
2. Maintaining a regular supply of inputs
3. Adding value to the primary production
4. Reducing exploitative situations by the provision of cheaper credit and other facilities.
5. Increased catching efficiency and reduced wastage by technology improvements.
6. Increasing the efficiency of operation by education and training.
7. Ensuring the sustainability of activity by resources management.

4.27 The Govt.of Kerala has provided various assistance to MATSYAFED in setting up infratructural facilities like Net factories, Ice and Freezing plant, deep sea fishing vessels, fish manure plant, Chitosan plant, Aquaculture farms and other support services like Matsya Maveli stores,Vyasa stores,Diesel bunk,Vanitha bus services fish stalls, peeling centres throughout the State.

4.28 MATSYAFED has constituted 81 marine Primary Fisheries Co-operative Societies with a membership of over 71,000 active fishermen.The maximum number of fishermen (13,254) was covered from Alappuzha District followed by

Thiruvananthapuram with 12,521 . The districts of Alappuzha and Thrissur covered 57.60% and 50.90% of active fishermen respectively as members of the Primary Co-operative Societies (Table 4.5).

4.29 Presently MATSYAFED has 18 Primary Fisheries Co-operative Societies in Thiruvanathapuram District, followed by Kollam (13), Alappuzha (9), Ernakulam (8), Trissur (6), Malappuram (9), Kozhikkode (9), Kannur (5) and Kasargode (5) (Annexure:5)

4.30 This Apex federation is responsible for channelising the financial and managerial assistances of the project to artisanal marine fishermen through Primary Co-operative Societies. The direct involvement of the fishermen is ensured at the Primary Co-operative level. These Co-operatives are controlled by the Federation.

4.31 The Project(Integrated Marine Fisheries Development Project,IMFDP) helped the MATSYAFED to build a suitable Co-operative structure among the artisanal marine fishermen in Kerala. The project advocated group ownership

Table:4.5

COVERAGE OF FISHERMEN'S DEVELOPMENT AND WELFARE CO-OPERATIVE SOCIETIES : DISTRICT WISE

Sl. No.	Name of District	No.of Active fisherman	No.of members in the FDWCS	Percentag
1.	Thiruvananthapuram	29,841	12,521	42.Ø
2.	Kollam	17,234	8,516	49.4
3.	Alappuzha	23,Ø13	13,254	57.6
4.	Ernakulam	14,Ø27	6,27Ø	44.7
5.	Thrissur	12,21Ø	6,217	5Ø.9
6.	Malappuram	15,598	6,2Ø8	39.8
7.	Kozhikode	19,425	8,259	42.5
8.	Kannur	12,343	1,914	15.5
9.	Kasargode	9,879	4,139	41.9
	Total	1,53,57Ø	67,298	43.8Ø

Note1. Table was compiled from the data supplied by the Planning and statistical Cell, Directorate of Fisheries, Thiruvananthapuram and MATSYAFED, Thiruvananthapuram.

2. No.of members was calculated as on 31.12.1991.

3. No.of active fishermen was estimated during 199Ø-91.

of fishing assets among the members of Primary Co-operative Societies by way of;

1. Reducing the dependence upon outside groups and organisations.
2. Creating a cohesion amongst the interest groups so that they could act together in their own interest,

3. Reducing the financial and physical risks for members.

The ways and means of achieving these would obviously vary from place to place .

4.32 The project has provided a working capital of Rs.100 lakh for the successful operation of Primary Fisheries Co-operative Societies in Kerala. Further members of the Society have contributed about Rs.300 lakh as their share capital.

4.33 In order to accelerate the pace" **co-operativisation**," as denoted by the policy makers for indicating the level and degree of forming Co-operatives , Govt.of Kerala had earmarked Rs.217.lakh in the seventh Five Year Plan. However MATSYAFED utilised 101.82% over the plan allocation during 1985-90. Further, managerial grant and share capital contribution by the State Government to the Apex co-operative federtion (MATSYAFED) and Primary Fishermen Co-operative Societies

the allocation Rs.297 lakh. Hence it was safely assumed that initiative and interest taken by the Government has has helped alot for the co-operativisation of fishermen in Kerala (Table 4.6).

4.34 Table 4.7 clearly shows that Fisheries Co-operatives in Gujarat, Kerala,Maharashtra and West Bengal achieved a better coverage . A number of Fisheries Co-operatives in West Bengal were helping their members and their family to the extent of providing complete marketing infrastrcture for sale of fish at remunerative prices. According to the National Fishermens' Co-operative Federation (FISCOPFED), Apex body of Fisheries Co-operatives in India, Primary Fisheries Co-operative Societies in India covered only 11% of active fishermen in India. Hence the coverage of Primary Fisheries Co-operative Societies among the artisanal marine fishermen Kerala is 3.8 times more than the national average. Average member ship per Society was the highest in Kerala (710) followed by Tamil Nadu (455). The success story of Fisheries Co-operatives among the artisanal marine fishermen in Kerala has begun with the implementation of the Project, Integrated Marine Fisheries Development Project (IMFDP).

Table:4.6

DETAILS OF SEVENTH FIVE YEAR PLAN ALLOCATION AND UTILISATION OF FUNDS

(figures in Rs. Lakhs)

	Agregate outlay	Actual expenditure
1. Managerial grant and share capital contribution to MATSYAFED and Village Fishermen Co-operatives.	450.0	297.0	316.57
2. Assistance to Fishermen Co-operative (MATSYAFED)	50.0	36.50	95.32
3. Integrated Marine Fisheries Devp. Project(NCDC assisted)	700.0	217.02	318.84
4. Fishermen Development project with external assistance	Nil	2.00	17.83
Fisheries 7th plan outlay	4000	3192.34	3090.98

Source:

Govt.of Kerala, Dept.of Fisheries,'Kerala Fisheries: Facts and Figures' 1990.

TABLE 4.7

FISHERIES CO-OPERATIVE SOCIETIES IN INDIA

Sl. No:	State/Union Territories	State level federations	Central level	Primary Societies No:	Membership
1.	Andhra Pradesh	1	10	2436	191686
2.	Assam	1	nil	476	81904
3.	Bihar	1	5	475	30975
4.	Goa	nil	nil	15	1868
5.	Gujarat	1	4	248	322500
6.	Haryana	nil	nil	42	765
7.	Himachal Pradesh	nil	1	25	3095
8.	Jammu & Kashmir	nil	nil	4	701
9.	Karnataka	1	3	235	49000
10.	Kerala	1	9	81	69868
11.	Madhya Pradesh	1	7	967	36000
12.	Maharashtra	1	21	188	172000
13.	Manipur	1	nil	96	6354
14.	Meghalaya	nil	nil	46	2819
15.	Nagaland	nil	nil	17	319
16.	Orissa	1	4	491	52000
17.	Punjab	nil	nil	4	60
18.	Rajastan	1	nil	78	2826
19.	Sikkim	nil	nil	nil	nil
20.	Tamil Nadu	nil	10	340	157400
21.	Tripura	1	nil	124	13223
22.	Uttar Pradesh	1	2	500	11000
23.	West Bengal	1	20	848	71267
24.	Andaman & Nicobar	1	nil	35	1455
25.	Arunachal Pradesh	nil	nil	4	153
26.	Chandigarh	nil	nil	1	11
27.	Daman & Diu	nil	nil	6	1655
28.	Delhi	nil	nil	2	39
29.	Lakshdweep	nil	nil	2	343
30.	Mizoram	nil	nil	25	437
31.	Pondicherry	1	2	34	13212
Total		16	98	7845	1294,935

Source: i) Ministry of Agriculture & Department of Co-operation, Government of India.

ii) National Bank for Agriculture and Rural Development (NABARD)

FISH MARKETING

4.35 Fish marketing refers to all those functions involved from the catching of fish to the point of final consumption i.e., from producer to consumer . It will help to deliver the best quality produce at reasonable price to the consumer. An efficient marketing system may stabilise fluctuations in prices during flush and lean seasons. Further, the system will establish standards for quality control at various levels of storage, preservation and processing in accordance with the requirement of local and foreign markets.

4.36 The aggregate potential of fish production off the continental shelf of Kerala is estimated at 10 lakh tonnes per annum.The marine fish production was 5.74 lakh tonnes valued at Rs.570 crores at beach level prices during 1994-95. At present 60% of this potential is being exploited mainly through mechanised crafts ( )

4.37 Kerala accounts for 25% of India's fish production. The value of annual fish consumption in Kerala is estimated at Rs.1450 crores. Major species like perches, caranx, oil sardines, mackerels, shrimp and anchovies accounts for 50% percentage of the catch by

volume. The unit selling price of fish has increased from Rs. 2.27 per kg in 1983-84 to Rs. 25 per Kg in 1994-95. Sixty percent of the landings, in quantity terms, take place between June & September. Kerala has significant outstation arrivals primarily from Karnataka, Goa and Tamilnadu.

Major species

4.38 Perches, caranx, oil sardIne, mackerel, seer fish, anchovies and shrimp constitute the major species of fish in the marine landings of Kerala . High value species like seer, pomfret represents a very small percentage of total landings. In 1994 they accounted for less than 2% of total catch. In the same year, perches and mackerel constituted 13.2% and 11.1Ø% of total catch respectively. (Table 4.8)

4.39 Some changes were observed in the product mix of fish landings in Kerala. Decline of the landings of major species like sardine which constituted 44% of total catch during 1985-86 to only 11.8% during 1994-95. However perches which represented only Ø.21% during 1985-86 increased to 13.2% of total landings during 1994-95. The share of shrimps in the total landings has declined from 1Ø% during 1985-86 to 9.2% during 1994-95. At the same

TABLE:4.8

SPECIESWISE COMPOSITION OF MARINE FISH LANDINGS IN KERALA

(Figures in Tonnes)

	1985-'86	1989-'90	1994-'95
Elasmobranch	7518	8337	5340
Sardine	154638	223982	68062
Anchovy	19413	39422	47231
Perch	723	14807	75984
Caranx	2011	21165	53199
Mackerel	28216	60955	64081
Seer fish	2650	5428	7224
Shrimp	35178	32527	52872
Others	100,479	1,29,091	2,00,268
Total landings	350,826	535,714	574,261

Source:
Directorate of Fisheries (1996); Marine Fisheries of Kerala at a glace (1995)

time the share of anchovies has gone up from 5.5% during 1985-86 to 8.2% during 1994-95. Caranx which represented only Ø.57% of total landings during 1985-86 has become a major species (9.2%) during 1994-95. Similarly mackerel which constituted 8.Ø4% during 1985-86 , has contributed 11.1Ø% of total landings during 1994-95

4.4Ø Kerala is considered as a very good market for fish and fishery products. Over 9Ø% of the population consume fish and fishery products. A study conducted by Indian Institute of Management, Ahammedabad (1985) estimated a deficit of more than 42% . So, the consumers pay fairly high prices for fish, especially during the lean season.

4.41 Daily supplies of fresh fish to the retail markets show considerable fluctuations in line with the catches landed. During the days of plentiful catches the producers are generally at a disadvantage owing to low price and the retailers are also at a disadvantage owing to undisposed and decomposed fish at the end of their market sales. The analysis of species composition of marine fish landings in Kerala over a period of five years has shown that production of exportable and non-exportable varieties are maximum in the districts of Kollam and Thiruvananthapuram respectively across seasons.

4.42 The marketing of quality fishes and other acceptable varieties do not pose any problem;however most of the traditional sector's catch constitute low valued fishes which has limited acceptance in the local markets.

Type of fish markets

4.43 Broadly fish markets in the State can be divided in to two category;

a) Fresh fish markets and
b) Dry fish markets.

These two types co-existed both in the producing and consuming centres in Kerala.There are seven major landing centres namely Neendakara, Ambalapuzha, Kochi, Ponnani, Kozhikode, Kannur and Beypore and 62 secondary markets in the State. Out of 62 secondary markets, four of them are exclusively for trading dry fishes. Maximum number of major fresh fish markets are in Malappuram (10) followed by Kannur (8), Kozhikode (6) and Thrissur (5) . The small fish vendors and fisher-women in coastal areas have been playing a crucial role in the distribution of fish throughout the southern districts of Kerala.

4.44 The inflow of fresh fish from Karnataka is estimated at 6,500 tonnnes per annum and from Tamil Nadu, 18,500 tonnes p.a. The fairly well developed transportation system in the State has helped a lot for the wider

movement of fish within the State. Seventy five percent of transportation of fish in the State is by road and 20% by rail and the remaining by waterways.

Use flow:

4.45 In general 60% of the fish is sold as fresh and 20% as dry edible in the domestic market. Fifteen percent of the landings are exportable varieties of fish and the remaining , to fish meal plants. The use flow pattern is found to be same in the major producing centres in Kerala.

Physical flow:

4.46 While analysing the physical flow, 68% of the total landings is consumed at the production centres themselves and 28%, at the centres located within a distance of 200 K.Ms from the landing centre. The interstate flows of fish is not very high and it constitutes only 4% of the total landings in Kerala. Kannur and Ernakulam are the important landing cum assembly centres which despatch fish mostly out of the state. Thiruvananthapuram receives the maximum inflow of fish from neighbouring States. Other centres like Neendakara and Ernakulam, regulate the flow of fish within the State.

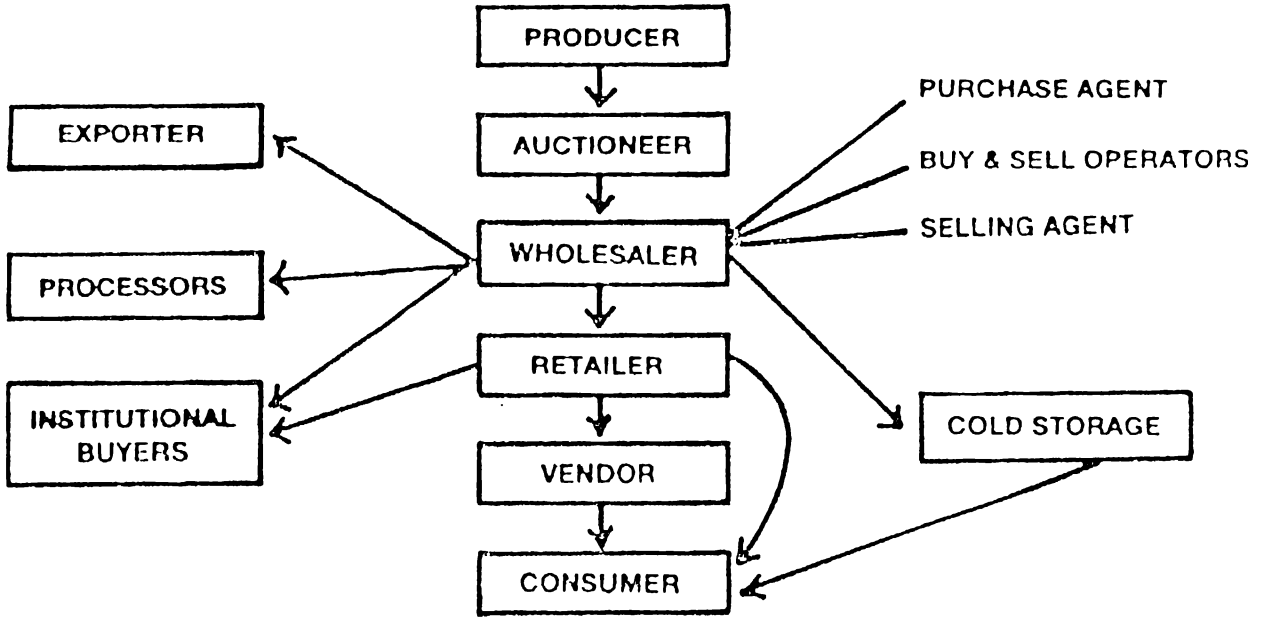
Distribution chain

4.47 Traders, commission agents and middlemen are the important marketing intermediaries in the distribution channels for fish in Kerala. According to Department of Fisheries(1983), 3,897 intermediaries were engaged in the purchase and sale of fresh fish as auctioners, wholesalers, retailers and vendors in the State. It is estimated that 15,000 intermediaries are at present working in Kerala .

4.48 The elements of fish marketing chain in Kerala are shown in the Exhibit.4.1. Primary sale of fish takes place at the beach level and wholesalers procure around 80% of the fish through these auctions. Then the wholesalers typically auction the fish at wholesale auction from where it is passed to the next link in the chain who is typically the retailer. Sometimes, retailers procure fish directly from the beach auction. At the retail markets, retailers either auction or directly sell the fish to the final link in the chain, ie. vendors who are responsible for reaching the fish to the final consumer. However, a significant proportion of retailers usually make a direct sale to the final consumer. In some cases, vendors may procure fish from the beach or the wholesale auction.

Exhibit 4.1

FISH MARKETING SYSTEM IN KERALA



1. PRODUCER MAY HAVE DIRECT SALES TO EXPORTERS & PROCESSORS

2. IN SOME CASE AUCTIONEER MAY ALSO BE THE WHOLESALER

AFF-MC

4.49 A parallel chain that operates in some of the urban centres is the wholesaler - cold storage - final consumer arrack shops also procure fish from wholesalers or retailers. In few cases, fishermen have direct sales to exporters and processors or their agents. It is observed that some of the auctioneers procure fish from outstation locations for local sales during lean seasons.

Price spread analysis:

4.50 The price spread analysis determines the share of beach price as a percentage of the consumer price. In general, sales are classified into two types; such as a) Local sale at production centres and b) Sale to consumer centres located away from the production centre. In the first category , the number of intermediaries involved in the distribution are few ; hence , fishermen get higher percentage. Mainly low-valued fishes are marketed through this channel. The average price realisation of fishermen in the disrticts of Thiruvananthapuram and Kollam are 70% and 65% respectively.

b) Sales to consumer centres away from the landing centres has shown that price spread between intermediaries are very high and that the fishermens' share to the consumer price is around 35%.

4.51 There is a fairly well-established information, transportation and distribution network for fish.Information on surplus landings and scarcity at consumption points is accessed by wholesalers who then arrange to procure and despatch fish to these centres. In the present system, wholesalers are reaching more profit by widening their procurement horizon and offering relatively low profit margin to other intermediaries.

FISH MARKETING BY CO-OPERATIVES:

4.52 The development of Fisheries Co-operatives was encouraged in the beginning as a market intervention on the hypothesis that fishermen did not realise adequate value for their catch . However the share of Fisheries Co-operatives in the area of marketing has been declining over the years in spite of various interventions (Kurien, 198Ø). As a consequence of this, marketing becomes unviable for most of the Co-operatives. This has led to the growth of private fishery trade and their all round command in the fish marketing in Kerala (Rajasenan 1986).

4.53 There exists two types of market inter-linkages in the traditional fishing village of Kerala . The first envisaged the loan against the commitment of future labour, while the other for the commitment of future delivery of catch (Platteau, 1984). According to Kirby and

Szezepanik (1957) fishermen under these circumstances, have no incentive to save and invest;for any return accruing from the investment would be appropriated by the middlemen. The overriding concern of every middleman is the difference between the price paid and the price received from the buyer. The middleman's total profit is a function not only of the price differential or margin, but also of the volume of fish handled. The volume of fish handled, in turn, is a decreasing function of the price differential (Rajasenan, 1986).

Market intervension

4.54 As a part of marketing assistance offered under the Project(IMFDP) , MATSYAFED has, in the past, attempted intervening in the fish marketing chain. The earliest of the market interventions was at Neendakara in 1985-86 where fish was procured indirectly through auctioneers who supplied it to MATSYAFED's Ice and Freezing Plant at Cochin. The fish was stored at the plant and sold during the lean season. Only the higher value fish were dealt in, and totally, 60 tonnes of fish was procured. However, the intervention was discontinued after it incurred a loss of Rs. 6 lakhs.

4.55 In 1990, MATSYAFED intervened in the fish markets at Alappuzha and Kollam. Procurement was done directly from the beach auctions. At Alappuzha, 16 operations were conducted for a period of two months and the fish procured was iced and transported to interior markets in Kottayam where it was sold through existing Vendors Societies. This operations did not involve any significant profits or losses. At Kollam, 6 of such operations were conducted where fish was procured and transported to wholesale markets at Thiruvananthapuram where it was sold. This intervention exercise incurred a loss of Rs. 60,000.

4.56 The market interventions at Kollam and Alappuzha involved procurement of different species of fish including the high valued fishes. There was no response to MATSYAFED's intervention from the established marketing intermediaries including wholesalers. MATSYAFED's past efforts at market intervention were not been planned or organised ventures. No clear cut guidelines were laid down with respect to prices for procurement and sale, quantities of the different species to be procured and so on. A retrospective analysis of reasons for failure of the intervention attempts have also been missing.

4.57 However experience of other Asian countries has shown that Fisheries Co-operatives can market fish effectively .Taking into consideration such aspects,the scholar conducted a study among the intermediaries, producers and consumers of fish and fishery products with a view to suggest an alternative system of marketing capable of protecting the interests of both producers and consumers effectively.

CHAPTER:V

AN OVERVIEW OF THE PROJECT-
INTEGRATED MARINE FISHERIES DEVELOPMENT PROJECT (IMFDP)

5.1 Artisanal Fishermen are one of the most backward communities in the State. The efforts for modernisation in artisanal fishery techniques have not benefitted them much mainly due to the non-availability of infra-structure facilities and lack of financial resources. After considering these facts, Government of Kerala adopted an integrated approach, namely MATSYAFED which helped to build a co-operative organisational structure in the State.In keeping with its new thrust, the National Co-operative Development Corporation (NCDC) sanctioned an Integrated Marine Fisheries Development Project in 1985.

5.2 The major objectives of this project as stated by the Government of Kerala are as follows:

* # "Co-operativisation " of traditional marine fishermen

  Increased fish production in the traditional marine-sector through improved technology

* Enhanced returns to marine fishermen for their production through rationalisation of marketing system

* Development of suitable infrastructural facilities

"Co-operativisation" is the term widely used by the Policy makers of the State to denote the pace and progress of forming Co-operatives. The scholar also followed the same terminology in this the report.

TABLE 5.1

INTEGRATED MARINE FISHERIES DEVELOPMENT PROJECT (IMFDP)

Costwise Break- up

(figures in Rs. Lakhs)

Component	Block Cost
Fishing input	3206.57
Marketing assistance	34.00
Infrastructural facilities	542.80
Project management	252.23
Training and Extension	183.75
Margin money for Working Capital	89.34
Pre-operative expenses	76.77
Physical and price contingencies	745.65
Total	5131.11

Source:MATSYAFED,Thiruvananthapuram.

5.3 The total investment of this project up to Phase III was Rs.5131.11 lakhs. Sixty three percent of the total cost was alloted for supplying of fishing inputs among beneficiaries (Table 5.1).

SALIENT FEATURES OF THE PROJECT

5.4 The essential feature of the project was to organise active marine fishermen into production groups of 5 to 20 members and to equip them with full complement of inputs.

5.5 Beneficiaries of the project were selected among members of the Primary Fisheries Co-operative Societies organised by the Govt. of Kerala. Furher, they were also included in the list maintained by the Fisheries Welfare Fund Board for the active fishermen of Kerala. Ten percent of the loan was to be treated as the individual share of the fisherman in the Primary Fisheries Co-operative Society. On an average, each fisherman held 200 shares of Rs.10/- each.

5.6 The project assisted 33.60% of active members of the Co-operative Societies. All districts except Kannur and Kasargod were having project beneficiaries over 2000. In terms of numbers, Fisheries Co-operative Societies in Alappuzha District were the maximum beneficiaries (13,254) followed by Thiruvananthapuram (12,521) (Table 5.2).

Table:5.2

COVERAGE OF THE PROJECT AMONG THE MEMBERS OF PRIMARY FISHERIES CO-OPERATIVE SOCIETIES

District	No.of members in the FDWCS	Project Beneficiaries No:	%
Thiruvananthapuram	12,521	4013	32.10
Kollam	8,516	2059	24.20
Alappuzha	13,254	3833	28.90
Ernakulam	6,270	2806	44.80
Thrissur	6,217	2125	34.20
Malappuram	6,208	2304	37.10
Kozhikkode	8,259	2487	30.10
Kannur	1,914	1535	80.20
Kasargode	4,139	768	18.80
TOTAL	67,298	21,930	32.6

Source: MATSYAFED, Thiruvananthapuram.

5.7 Assistance given to the fishing groups classified under 'small' and 'large' groups. Usually fishing crafts made of marine plywood having an Over All Length (OAL) of about 28' with 8 HP or 15 HP OutBoard Motors were distributed among the small fishing groups. Among the large fishing groups, Thanguvallam (Plankbuilt canoes) of an OverAll Length of 60' with 25 HP OutBoard Motors were distributed. Disco Nets, Gill Nets and Drift Nets were distributed among small groups and large groups received Thanguvala and Anchovy nets. Fishing accessories like floats, ropes and sinkers were also supplied to the beneficiaries. On an average, each small group and large group received an assistance worth Rs.2 lakhs and Rs.6 lakhs respectively.

5.8 The project had assisted 3244 fishing groups with fishing assets, worth Rs.25,82,45,144 . Among the districts, Alappuzha received the maximum of Rs.487 lakh (18.90%) followed by , Kollam with Rs.376 lakh (14.60%) All districts except Kannur and Kasargode received assistance , worth Rs.200 lakh and above. Eighteen percent of the beneficiaries were selected from Thiruvananthapuram followed by 17.5% from Alappuzha. Small fishing groups in Thiruvananthapuram had received maximum assistance under the project (Table 5.3)

Table:5.3

DISTRICTWISE DETAILS OF PROJECT ASSISTANCE AND BENEFICIARIES

District	Cummulative assistance (Rs)	No.of Fishing unit	No.of Beneficiaries
Thiruvananthapuram	3,41,75,840	1220	4013
Kollam	3,75,90,492	319	2059
Alappuzha	4,87,10,999	381	3833
Ernakulam	2,97,37,449	255	2806
Thrissur	2,14,86,017	177	2125
Malappuram	2,59,61,476	198	2304
Kozhikkode	3,14,48,220	195	2487
Kannur	1,61,27,992	287	1535
Kasarcode	1,30,06,659	212	768
Total	25,82,45144	3244	21930

Source:MATSYAFED, Thiruvananthapuram

5.9 The project had assisted 12,952 fishermen completely for procuring their fishing assets. One thousand nine hundred and eight fishermen from Ernakulam and 1802 fishermen from Alappuzha received complete assistance from the project. The highest number of fishermen who Thiruvananthapuram (2408) and Alappuzha (2031). Eight thousand nine hundred and seventy eight beneficiaries (40.90%) received partial assistance from the project.

5.10 The beneficiary groups marketed their catches through auctioneers engaged by MATSYAFED. One percent of the auction value went to the auctioneer and 4.0% for taking up economic activities for the members. Untill 1995 , 60.0% of the value was paid to the fishermen immediately and the balance to the joint bank account of the group and the Project Officer.Recoveries of the loan portion of the investment and emergency requirements of funds were met from this account.

FISHING INPUTS

5.11 Twenty one thousand nine hundred and thirty fishermen became owners of fishing inputs under the project availing 25 to 40% subsidy. A total of 3007 outboard motors worth Rs.996 lakhs, 1916 craft worth Rs.639 lakhs and gear valued at Rs.983 lakhs have been distributed under this project. Thirty nine percent of the total

finance went to fishermen for purchasing OutBoard Motors, 25% for craft and the remaining 36% for acquiring nets additional inputs and accessories (Table 5.4).

5.12 Daily monitoring of reports on catches, species composition, value, expenses and savings from each group was carried out and this enabled the organisation to assess the impact of the project on the real income of fishermen.

5.13 Phase I of the project was implemented in 15 marine villages in 1984-'85 with an outlay of Rs.543.50 lakh . After two years, Phase II was launched in 32 marine villages with a capital expenditure of Rs.1034 lakh. Encouraged by the results of Phase I & II, National Co-operative Development Corporation sanctioned Rs.3553 lakh for Phase III in 1994 for assisting fishermen throughout Kerala. Total duration of the project would be 20 years, which was divided into four phases of 5 years each.

5.14 Altogether 3244 groups comprising 21,930 active marine fishermen i.e, 14.3% of the total, received assistance under the project. However in Ernakulam 20% of the active fishermen were covered under this project. In Alappuzha, Thrissur and Malappuram districts, more than 14.80% of active fishermen were covered by the project. In terms of numbers, Thiruvananthapuram topped the list with 4013 followed by Alappuzha.

TABLE 5.4

DETAILS OF FISHING INPUT DISTRIBUTED UNDER THE PROJECT - ITEM WISE

	OutBoard Motors		Craft		Gear	Total
	Q	V	Q	V	V	Lakhs
Phase I	819	145	395	95	166	406
Phase II	816	242	406	175	386	803
Phase III	1372	609	1115	369	395	1373
TOTAL	3007	996	1916	639	947	2582

Source: MATSYAFED,Thiruvananthapuram.

Table:5.5

DETAILS OF BENEFICIARY GROUPS AND FISHERMEN SELECTED UNDER THE PROJECT

Phase	No.of Fishing units	No.of Beneficiaries
* IMFDP I	850	4,557
IMFDP II	644	7,223
IMFDP III	1750	10,150
Total	3244	21,930

* IMFDP: INTEGRATED MARINE FISHERIES DEVELOPMENT PROJECT

Source: MATSYAFED, Thiruvananthapuram.

Table:5.6

AVERAGE ASSISTANCE PER FISHING GROUP UNDER THE PROJECT DISTRICTWISE

District	Cummulative assistance (Rs)	No.of units	Average asst/unit(Rs)
Thiruvananthapuram	3,41,75,840	1220	28,013.00
Kollam	3,75,90,492	319	117,838.50
Alappuzha	4,87,10,999	381	127,850.40
Ernakulam	2,97,37,449	255	116,617.40
Thrissur	2,14,86,017	177	121,389.90
Malappuram	2,59,61,476	198	131,118.60
Kozhikkode	3,14,48,220	195	161,272.90
Kannur	1,61,27,992	287	56,195.10
Kasargode	1,30,06,659	212	61,352.20
TOTAL	**25,82,45,144**	**3244**	**79,607.00**

Source: MATSYAFED,Thiruvananthapuram

5.15 In phase-I, the project assisted 850 fishing groups, followed by 644 and 1750 in phase- II and III of the project respectively. In terms of beneficiaries 4,557 were assisted under phase-I, followed by 7223 and 10,150 in phase-II and III respectively (Table 5.5)

5.16 Small fishing groups had received maximum assistance in Thiruvananthapuram ; in Kozhikode , large groups had benefited most under the project. Average assistance per unit was maximum in Kozhikode followed by Malappuram (Rs.131,118.60) and Alappuzha with Rs.127,850.40. In Thiruvananthapuram, average assistance per unit was only Rs.28,013 (Table 5.6)

5.17 On an average, every beneficiary in Thiruvananthapuram got Rs.8,516.30, whereas their counterpart in Kozhikode received assistance, worth Rs.12,645. Kollam District received the maximum assistance per beneficiary (Rs.18,258.70) followed by Kasargod (Rs.16,935.80.) (Table 5.7)

5.18 Two thousand two hundred and ninety beneficiaries were selected from Thiruvananthapuram under phase-I, 2127 and 1706 beneficiaries were selected from Alappuzha under phase II and phase-III of Integrated Marine Fisheries Development Project respectively (Table 5.8).

Table:5.7

AVERAGE ASSISTANCE PER FISHERMAN UNDER THE PROJECT

- DISTRICTWISE

District	Cummulative Assistance(Rs)	No.of Beneficiaries	Average Asst/bnfs(Rs
Thiruvananthapuram	3,41,75,840	4013	8,516.30
Kollam	3,75,90,492	2059	18,256.70
Alappuzha	4,87,10,999	3833	12,708.30
Ernakulam	2,97,37,449	2806	10,597.80
Thrissur	2,14,86,017	2125	10,111.10
Malappuram	2,59,61,476	2304	11,268.00
Kozhikkode	3,14,48,220	2487	12,845.00
Kannur	1,61,27,992	1535	10,506.80
Kasargode	1,30,06,659	768	16,935.80
TOTAL	25,82,45,144	21,930	11,775.90

Source: MATSYAFED, Thiruvananthapuram

TABLE 5.8

DISTRIBUTION OF BENEFICIARIES OF THE PROJECT - DISTRICT WISE

	Phase I		Phase II		Phase III		Total	
	NU	NB	NU	NB	NU	NB	NU	NB
Thiruvanathapuram	473	2290	78	141	669	1582	1220	4013
Kollam	NIL	-	166	850	153	1209	319	2059
Alappuzha	NIL	-	120	2127	261	1706	381	3833
Ernakulam	68	1224	NIL	-	187	1582	255	2806
Thrissur	NIL	-	111	1330	66	795	177	2125
Malappuram	NIL	-	82	1369	116	935	198	2304
Kozhikkode	NIL	-	87	1406	108	1081	195	2487
Kannur	201	737	NIL	-	86	798	287	1535
Kasargode	108	306	NIL	-	104	462	212	768
Total	850	4557	644	7223	1750	10150	3244	21930

NU - Number of Units

NB - Number of Beneficiaries

Source: MATSYAFED ,Thiruvananthapuram

5.19 Average assistance received by every fishing group under Phase-I was Rs.47,711.90, followed by Rs.1.25 lakhs in phase-II and Rs.78,469.90 in phase-III of the project in Kerala. In terms of average assistance per beneficiary the amount was Rs.8,893.70 under phase-I followed by Rs.11,131.30 in phase-II, and has gone up to Rs.13,579.30 in phase - III of the project (Table 5.9).

5.20 Of the National Co-operative Development Corporation's assistance of Rs.4074 lakhs, Rs.2753 lakhs formed the loan component, which had to be repaid within 9 years after a four-year moratorium on principal, at 11.25% interest rate. In the Ist phase of the project, National Co-operative Development Corporation contributed 60% of the project cost as loan and of the remaining 40%, 20% each was contributed by the State Government and National Co-operative Development Corporation by way of subsidy for promoting the Fisheries Co-operatives in Kerala. However, in phase II , III & IV , National Co-operative Development Corporation has funded 75% cost of the project as loan and the remaining 25% was funded by the State Government by way of managerial subsidy to the Primary Fisheries Co-operatives.

Table No:5.9

AVERAGE ASSISTANCE PER BENEFICIARY GROUP/FISHERMAN OF THE PROJECT ACROSS PHASES

(Fig. in Rs.)

Phase	Cumulative Assistance	Beneficiary/ Fishing Group	Average Asstance per Benf.
PHASE I	4,Ø5,55,148	4,557	8,893.7Ø
PHASE II	8,Ø3,67,628	7,223	11,131.3Ø
PHASE III	13,73,22,368	1Ø,15Ø	13,529.3Ø
Total	**25,82,45,144**	**21,93Ø**	**11,775.9Ø**

Source: MATSYAFED, Thiruvananthapuram

Repayment of Loan

5.21 Average percentage of repayment of loan over commulative assistance received under Phase I and II were 48.5% and 55% respectively. However, the irrational distribution of fishing inputs during the Phase III of the project had worsened the repayment condition. Average percentage of repayment of loan over cummulative assistance was only 29% in phase III. This has brought down the percentage of repayment of loan for all phases to 40.2 Another factor which the scholar had taken into consideration was the period of disbursement of loan ; since the major portion of phase-III loan was distributed mainly during mid 1994, it was assumed that the percentage of repayment would be better after one or two years. However, the scholar has made the ananalysis based on the data compiled by the Corporate office of MATSYAFED as on the 1st of October 1994 (Table 5.10).

5.22 While analysing the percentage of repayment across phases, it was obvious that percentage of repayment varied from phase I to phase III,. This was because of the change in the administrative set up of the project, mainly due to political reasons. Percentage of repayment of loan was highest in Kasargod (50.50%), followed by Kozhikode with 48.6%. Ernakulam, Thrissur and

Table:5.10

PROJECT ASSISTANCE AND REPAYMENT OF LOAN ACROSS PHASES

(figures in Rs.)

PHASE *	Cummulative Assistance	Cummulative Repayment	%
IMFDP I	4,05,55,148	1,96,68,843	48.5
IMFDP II	8,03,67,628	4,42,00,440	55.0
IMFDP III	13,73,22,368	3,99,86,864	29.1
Total	25,82,45,144	10,38,56,147	40.2

* IMFDP :INTEGRATED MARINE FISHERIES DEVELOPMENT PROJECT

Source: MATSYAFED, Thiruvananthapuram.

Kannur districts represented the repayment of loan above 40%..However beneficiaries in Thiruvananthapuram District repayed only 30.80% of their loan. In short, Rs.1037.57 lakh were repayed by the beneficiaries of Integrated Marine Fisheries Development Project as on 1st of October 1994 with an overall percentage of repayment of loan of 40.20 (Table 5.11).

5.23 Again the project has been extended to Phase IV in 1997 for another five years, with an additional Outlay of Rs 700 Lakh . The response of the project assistance has already been giving encouraging results inthe artisanal marine fisheries sector in Kerala.

Table:5.11

DISTRICTWISE DETAILS OF PROJECT ASSISTANCE AND REPAYMENT OF LOAN

(figures in Rs.)

District	Cummulative Assistance	Cummulative Repayment Amount	as a % of total
Thiruvananthapuram	3,41,75,840	1,05,29,179	30.8
Kollam	3,75,90,492	1,48,26,499	39.4
Alappuzha	4,87,10,999	1,75,58,705	36.0
Ernakulam	2,97,37,449	1,23,74,563	41.6
Thrissur	2,14,86,017	94,11,979	43.8
Malappuram	2,59,61,476	99,87,206	38.5
Kozhikkode	3,14,48,220	1,52,75,817	48.6
Kannur	1,61,27,992	73,18,164	45.4
Kasargode	1,30,06,659	65,74,035	50.5
Total	25,82,45,144	10,38,56,147	40.2

Source: MATSYAFED, Thiruvananthapuram

CHAPTER: VI

THE STUDY

Need for the study:

6.1 Fishing season in Kerala is largely limited to six months and above 60% of the landings take place from June to September. Obviously prices fall during this period. Fisherman being economically weaker, find it impossible to benefit from the increased availability of fish on account of the perisha ble nature of the produce. The limitation of the channel also restricts the production potential from being fully utilised. During the remaining period of 8 months, though prices are better, availability is poor and the fishing effort and operational expenses are more. Hence most of them resort to borrowing money from all avail able sources during this period. Owing to the age old structural relationships and the absence of responsive alternatives such borrowings are from the informal sources which are linked with either production or marketing intermediaries.

6.2 The most important need for fishermen are credit facilities, marketing support and an integrated and responsive delivery mechanism to ensure that their needs are met. The exorbitantly high interest rate in the sector, preponderance of informal credit system, depend- ence of informal trade channels for inputs and outputs

and the absence of any comprehensive organisational system with real involvement of fishermen suggest that a suitable agency has not evolved in most of the situations. At the same time such dependence has only been on the increase owing to changes in technology, increased capital and operational expenses and periodical heavier landings. The output prices in Kerala are better and 90% of the population consume fish. Kerala is identified as one of the largest consumer markets for food products in the country. The deficit in the supply of fish is met mainly by the arrivals from the neighbouring States. Inspite of favourable market conditions, the producers remain disadvantaged due to the structural imbalances in both production and marketing systems.

Purpose :

6.3 Despite various intervensions, artisanal fishermen remain one of the weaker sections in Kerala's society. Most of the welfare and developmental programmes introduced for them had produced very little impact on their living conditions. Further, they are unable to compete with mechanised sector for fishing. Most of the technological development which had taken place after Indo-Norvegean Project favoured the growth of mechanised sector. As a consequence of this, fishing become unviable for artisanal fishermen who propagate the idea of " sustainble development" in the fishing industry. It is commonly

believed that an integrated approach may help them to improve their living conditions substantially. In the light of the above background the scholar has made an attempt to study the impact of Integrated Marine Fisheries Development Project among artisanal fishermen in Kerala .

6.4 **SPECIFIC OBJECTIVES:**

1. To study the impact of project assistance on the Average Gross Group Earnings of various types of fishing groups in Kerala.
2. To study the impact of project finance on the Average Net Per Capita Income of various fishing groups in Kerala.
3. To study the impact of project assistance on the Co-operativisation and group ownership among artisanal fishermen.
4. To study the fluctuations in the quantity and price of fish transacted by various intermediaries across fishing seasons.
5. To study the procurement pattern of fish by various intermediaries of fish marketing in Kerala.
6. To study the consumer preferences for value-added fish and fishery products in Kerala.
7. To study the price elasticity of demand among household consumers for fish and fish products in Kerala.
8. To identify an appropriate market intervention strategy for the Apex Co-operative Federation under the project.

METHODOLOGY AND DATA COLLECTION

6.5 Keeping the objectives of study in mind, the scholar collected information in four stages. In the first stage data collection was carried out among the beneficiaries of the project with the help of Project Officers. The project had assisted 3244 working groups in the State , out of which the scholar selected 916 beneficiary groups i.e. 28.2% of the total, as the sample size of beneficiaries for purposes of the study. Information was collected on fuel expenses per trip, maintenance expenses of fishing assets, type of assets owned prior to the project assistance, number of fishing days of various groups, group size, quantity and volume of catch landed for each group and the perception of fishermen regarding the changes in their consumption and life style after receiving the project assistance. The data was collected for 12 months starting from 1st of January 1994. The scholar made frequent visits to the project villages to cross-check the data collected from the Project Officers, with field reality. The scholar also included 163 non-beneficiary groups in the study. Hence, the study covered 1079 fishing groups from 30 selected fishing villages in Kerala.

6.6 The criteria opted for selecting the Societies were as follows:

1. The coverage of Primary Fisheries Co-operative Societies among artisanal marine fishermen.
2. Financial performance of Primary Fisheries Co-operative Societies.
3. Per Capita income of fishermen
4. The level of indebtedness of artisanal marine fisher men.

6.7 Again, the sample was further divided into " small and large" based on the ownership size, type of craft and gear employed for fishing, number of employees engaged for fishing and investment. The small group consisted of 15 employees and had an ownership size of 5, whereas the large group had 35 employees and 15 employee owners. The average assistance received from the project, by a small group was Rs.3 lakhs and that by a large group was 6 lakhs. The study covered 842 small groups and 237 large groups in Kerala. Among project beneficiaries, small groups constituted 738 samples and large groups, 178 samples. Among the non-beneficiaries, 104 small groups and 59 large groups were included in the study (TABLE 6.1)

6.8 The scholar further segregated small groups into two;such as the group having OutBoard Motors and the group not having OutBoard Motors in their craft. A comparison

Table: 6.1

COMPOSITION OF SAMPLE

(Based on Source of Finance & Ownership Size)

Category	Project Beneficiaries			Non benef.	Total
	Complete	Partial	Total		
Small	373	365	738	1Ø4	842
Large	83	95	178	59	237
Total	456	46Ø	916	163	1Ø79

Source: Survey Data

was made in terms of gross group earnings, number of fishing days and annual maintenance expenditure incurred by each group. This was done mainly for assessing the impact of project assistance in procuring better technology extended among artisanal marine fisherman.

6.9 Based on the source and mode of finance received by each fishing group, the scholar further segregated the sample among the beneficiaries of the project into two : those who had received complete assistance for procuring full complement of fishing asset and those who had received assistance only for replacing their worn-out assets. The study covered 460 partially assisted groups i.e 50.2% of the sample, out of which 365 numbers of small groups were included. This was done for assessing the impact of project finance on the net earning of benefici aries. The sources of finance were classified as project finance alone,other sources consisting of financial institutions and money lenders of which the latter formed the majority. As a whole, credit extented by the finacial institutions to them was marginal and the third category belonged a combination of both project and other sources of finance . A detailed analysis was carried out for estimating the Average Net Per Capita Income of Employee- Owners and Employees of fishing groups in Kerala.

6.1Ø In order to estimate the Gross Group Earnings per annum the data regarding quantity , volume of catch landed and operational expenses of each group were col lected. The major operational expenses incurred by the groups were for fuel and tea. These expenses were deducted from the gross group earnings to arrive at the total net group earnings per annum. The share of net group earnings among the owners and employees had been calculated based on the pattern that prevailed in the fishing villages selected for the study. In general 6Ø% of the net group earnings was considered as gross employees income. The remaining 4Ø% of the net group earnings as gross employee -owners' income from which interest and equipment mainte nance expenses were deducted. The average net per capita employee-owner income was arrived at dividing the gross employee-owners' income by the number of employee-owners. The average net per capita income of employee was calculat ed by adding the share of tea expenses to the gross per capita income of employees and divided by the total number of employees.

6.11 The scholar selected 25Ø fishermen from 3Ø fishing villages mainly for collecting information on their perception regarding the co-operativisation and group ownership due to the project. Data regarding sources of

borrowing, uses of funds of fishermen, degree of co-operativisation, their expectations, hindrance and suggestions for improving the performance of Societies were collected from the respondents. An interview schedule was designed to collect information from the samples. The schedule was pre- tested at selected villages in Thiruvananthapuram and Ernakulam and necessary modifications were incorporated and used for data collection. The group leaders were interviewed from each village for the study.

6.12 In the third stage, the scholar conducted a study among the intermediaries of fish marketing in Kerala. One hundred and twenty respondents were interviewed from ten major landing centres in Kerala. Representatives were selected from all categories of intermediaries like auctioneers, wholesalers, retailers and vendors for the study. Data regarding volume of transaction, procurement pattern major species handled, profile of buyers and credit terms were collected from the respomdents. The sample size was decided mostly on judgemental basis to obtain a good feel of the practices and perceptions of each of the elements in the marketing chain. Thirty respondents were selected from each category for the study.

6.13 Considering the fact that potential market for processed fish and fisheries product would be in the urban areas, the scholar conducted a survey among the household consumers of fish and fish products in Thiruvananthapuram, Ernakulam and Kozhikkode. Two hundred and fifty household consumers were selected for the fourth stage of the study and data collection was carried out with the help of an interview schedule. Hundred respondents were selected from Ernakulam and 75 each from Thiruvananthapuram and Kozhikkode. The respondents were classified based on their monthly income as low (up to Rs.3000/-), middle (between Rs.3001/- to Rs.4000/-) and high (Rs.4001 and above) income groups. Average monthly consumption, frequency of purchase, buying pattern, price elasticity of demand, consumers preferences for value added fish and fisheries products were tested among the household customers. The scholar resorted to judgemental sampling for the study. The interview shedule was pre-tested among ten household-consumers in Ernakulam before being taken as a tool for data collection.

SCOPE

6.14 The scope of the study was limited only to the marine artisanal fishermen, marketing intermediaries and house hold consumers in Kerala. The list of Primary Fisheries

Co-operatives /Fishing villages covered under the study were as follows:

1. Poovar-Carumkulam
2. Adimalathura
3. Vizhinjam North
4. Poonthura
5. Valiathura
6. Pallithura-Vettiyathura
7. Paravoor
8. Sraikkadu Azheekal
9. Neendakara-Puthenthura
10. Thumboli
11. Ambalapuzha-Punnapra
12. Pathiyankara-Pallana
13. Arthunkal-Ottamassery
14. Cherai-Munabam
15. Chellanam-Kandakkadavu
16. Kannamali-Cheriakadavu
17. Azhikkodu-Edavilangu
18. Kadappuram-Manathala
19. Nattika-Engandiyoor
20. Thevar kadappuram-Cheeran kadappuram
21. Parappanangadi-Kadalundi beach
22. Koottai-Paravanna
23. Chaliyam-Beypore
24. Marad-Thekkke kadappuram
25. Vadakara-Muttungal

26. Edakkad-Kannur City

27. Kurichiyil-Pallisserry

28. Thrikaripur-Padanna kadappuram

29. Kattikulam-Kasaba

30. Pulluvila.

The first 16th locations are situated in the southern and the rest, in the northern districts of Kerala.

6.15 The following locations were selected for conducting the field study among the members of channels of distribution of fish in Kerala.;

1. Pallikara

2. Thalassery

3. Ponnani

4. Kappad

5. Chambakkala

6. Kannamally

7. Panackal

8. Neendakara

9. Anjengo

10. Vizhinjam

The first five locations are in the northern half and the last five fall in the southern half of coastal Kerala.

6.16 The household consumer study was conducted in the following cities:

1. Thiruvananthapuram
2. Ernakulam
3. Kozhikode.

6.17 **DEFINITION OF TERMS**

1. **Artisanal marine fisherman**

Artisanal marine fisherman is a person who employes for fishing, crafts like kattamaram, plank built canoes and dug out canoes without using mechanical means of propulsions except OutBoard Motors.

2. **Value Addition**

It is a process of enhancing or maintaining the nutrition value of the product/produce through washing, grading, sorting and processing.

3. **Vendor**

Vendor is a marketing intermediary responsible for bringing fish directly to the households. Most of them go on foot while few employ autorikshaws /bicycles for transportation.

4. **Auctioneer**

Auctioneer is a person responsible for auctioning fish at the primary and wholesale market centres.

LIMITATIONS-

3.18 The absence of any scientific research in the subject compelled the scholar to rely heavily on data personally collected. However, care was taken to avoid personal bias in the sample selection and survey. Further, unwillingness of the project officials to disclose the actual utilisation of funds/ recovery of loan might have influenced the findings of the study. However,the scholar made a sincere attempt to minimise these errors to the maximum extent possible. The expert opinion and the research scholar's fourteen years of field experience in the fishing industry were utilised to the fullest extent to overcome the hurdles and avoid errors in the analysis.

CHAPTER - VII

MAJOR FINDINGS

7.1 Keeping the objectives of the study in mind, the scholar categorised major findings of the study under the following heads:

1. Fishing groups.
2. Project beneficiaries.
3. Primary Co-operative Society members.
4. Channel members of fish marketing and,
5. Household consumers.

FISHING GROUPS

Fishing crafts having and not having OutBoard Motors:

7.2 The nature of fishing operations was examined systematically for a period of 12 months in 1994 and it was clear that fishing crafts having OutBoard Motors went out for fishing only 53% of the available 151 days during the season January to May, while fishing groups who were not having OutBoard Motors went out for fishing on 76% of the avail able days. In the second season, June to August, of the 92 available fishing days, groups having and not having Out Board Motors went out for fishing for 45 days and 53 days respectively. As such there was no

TABLE 7.1

INTERGROUP COMPARISON OF FISHING DAYS ACROSS VARIOUS SEASON

Fishing Season	Fishing Days			
	Group without OBM		Group with OBM	
	days	%	days	%
January -May	115	76	80	53
June - August	53	58	45	49
September-December	93	77	64	53
Total/Average	261	72	189	52

Source:Survey Data

significant difference between the users and non-users of OutBoard Motors in the number of fishing days operated during the season. In the third season, September to December, the difference between them was significant as in the first season.

7.3 The analysis of number of days of fishing (which was also dependened on sea conditions) had reflected comparative use of OutBoard Motors, for exploiting fishery resources and it was clear that users of OutBoard Motors lagged behind. The fishing groups with OutBoard Motors in their craft went out for fishing only on 52% of the available days whereas the non-users of OutBoard Motors, 72% of the available days. Owing to the high operational cost, users of OutBoard Motors went out for fishing only on selective days (Table 7.1)

Average Gross Group Earnigs:

7.4 Average Gross Group Earnings of the users of OutBoard Motors was Rs.1,39,ØØØ and Rs. 4Ø,711 , for the non-users of OutBoard Mototrs. The Employee- Owner of the fishing group having OutBoard Motors earned Rs.18,48Ø p.a. and non-users of OutBoard Motors, only Rs.11,445. Since the project assisted only the users of OutBoard motors, the above findings clearly indicated the social worthiness of the project. [Exhibit: 7.1]

EXHIBIT 7.1

Comparison of Small fishing groups having and not having OutBoard Motors in their crafts

- Some Key Indicators for Kerala

SL. No	INDICATOR	NON OBM SECTOR	OBM SECTOR
1.	Ownership Size	2 Nos.	4 Nos.
2.	Total fishing days/annum	261 Days	189 Days
3.	Avg. Fishing group size	3 Nos.	5 Nos.
4.	Avg. No. of days with no catch	73 Days	48 Days
5.	Avg. Gross group earnings/annum	Rs.40,711	Rs.1,39,000
6.	Avg. Net maintenance/annum	Rs.2350	Rs.3350
7.	Avg. OBM maintenance/annum	NIL	Rs.7800
8.	Avg. Boat maintenance/annum	Rs.200	Rs.4650
9.	Avg. Net Per Capita Employee Owner Income (ANPCI-EO)	Rs.11,445	Rs.18,480

Small and Large size fishing groups:

7.5 It was observed that the number of days engaged for fishing was more or less same for small and large size fishing groups. The fuel expenses per fishing trip were compared between them across seasons . It was found the fuel expenses per trip during the season January to May for the larger group was six times larger than that of smaller groups. This ratio was fairly consistent across seasons. On an average, small groups were incurring a fuel cost of Rs.218.30 per trip and that of large groups, Rs. 1363 per trip (Table 7.2). In terms of maintenance expenditure for craft and net , the large groups spent about 2 times more on maintenance in comparison to that of the small groups. However, for OutBoard Motors maintenance, the large group incurred almost 2.5 times more than the small groups. On an average , small groups spent Rs.15,800 for the annual maintenance of fishing craft gear and OutBoard Motors whereas for large groups it was 2.36 times more than that of the small groups for the same purpose (Table 7.3)

TABLE 7.2

DETAILS OF FUEL COST PER FISHING TRIP ACROSS SEASON

(fig. in Rs.)

Fishing Season	Group Category	
	Small	Large
January - May	230	1400
June - August	210	1325
September-December	215	1365
Average	218	1363

Source: Survey Data.

Table: 7.3

DETAILS OF ANNUAL MAINTENANCE EXPENDITURE INCURED BY FISHING GROUP

(Figures in Rs.)

Item	Group Category	
	Small	Large
Fishing Craft	4650	9600
Fishing Gear	3350	7140
Out Board Motors	7800	19525
Total	15800	36265

Source:Survey Data

GRAPH:7.1

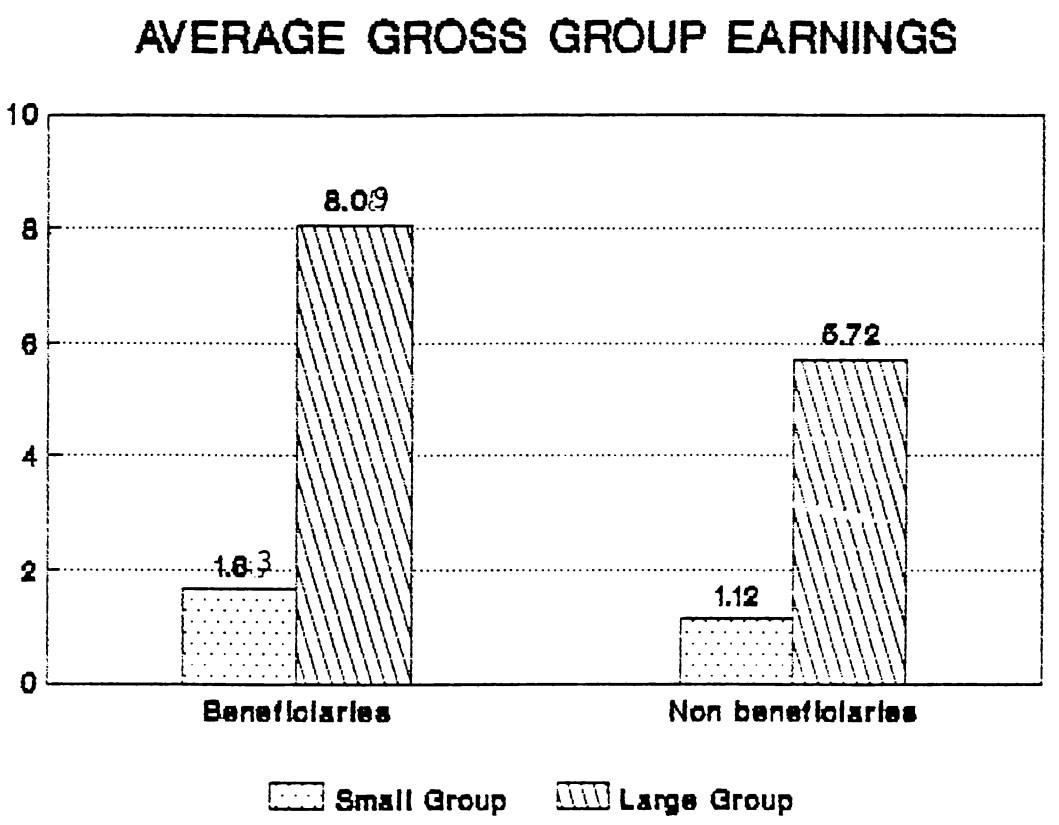


Figure in Rs. Lakhs

TABLE:7.4

AVERAGE GROSS GROUP EARNINGS OF FISHING GROUPS

(Figures in Rs. Lakhs)

Season	Small	Large	Small	Large
	(Non-beneficiaries)		(Beneficiaries)	
January - May	Ø.36	1.62	Ø.52	2.29
June - August	Ø.32	2.57	Ø.47	3.63
September-December	Ø.44	1.53	Ø.64	2.17
TOTAL	1.12	5.72	1.63	8.Ø9

Source:Survey Data.

Average Gross Group Earnings

7.6. The Average Gross Group Earnings of the small groups was the highest during September-December 1994 across the season. On an average, beneficiary groups of the project earned Rs.51,ØØØ p.a. more than by non beneficiaries (Table 7.4).

7.7 The variation in the Average Gross Group Earnings did not follow the same pattern for the large groups. The highest earnings for them was recorded on June -August 1994 across the seasons (Table 7.4).

7.8. The beneficiaries of the project earned Rs.2.37 lakhs p.a. more than by non beneficiaries. Again, on an average, beneficiaries of the project earned Rs.1.63 lakhs p.a. when they were in small groups and when in large groups the earnings was Rs.8.Ø9 lakhs. The Average Gross Group Earnings of fishing groups in Thiruvananthapuram were highest followed by Ernakulam. This was due to the better bargaining power of the fishermen in these districts. This was a remarkable achievement of the project in Kerala (Table 7.5).

7.9 Among the beneficiaries in the small groups,the highest earnings were during September-December, 1994. It went upto (Rs.64,Ø59/-) (Table 7.6). While comparing the

TABLE:7.5

AVERAGE GROSS GROUP EARNINGS OF FISHING GROUPS-DISTRICTWISE

(Figures in Rs. Lakhs)

	Fishing Groups			
	Beneficiaries		Non-beneficiaries	
District	Small	Large	Small	Large
Thiruvananthapuram	1.93	9.28	1.35	6.84
Kollam	1.75	8.60	1.22	6.24
Alappuzha	1.63	7.92	1.08	5.53
Ernakulam	1.80	8.89	1.27	6.53
Thrissur	1.31	7.79	1.04	5.34
Malappuram	1.56	7.54	1.02	5.18
Kozhikkode	1.66	8.14	1.14	5.77
Kannur	1.53	7.40	1.02	5.16
Kasargode	1.50	7.26	0.99	4.98
Average	**1.63**	**8.09**	**1.12**	**5.73**

Source:Survey Data.

TABLE:7.6

GROSS GROUP EARNINGS OF PROJECT BENEFICIARIES ACROSS SEASONS

(Group size: Small)

(Figures in Rs.)

	Fishing season		
District	Jan-May	June-Aug	Sept-Dec
Thiruvananthapuram	61760	55391	75849
Kollam	56000	50225	68775
Alappuzha	52160	46781	64059
Ernakulam	57600	51660	70740
Thrissur	41920	37597	51483
Malappuram	49920	44772	61308
Kozhikkode	53120	47642	65238
Kannur	48960	43911	60129
Kasargode	48000	43050	58950
Average	**52160**	**46781**	**64059**

Source:Survey Data.

Average Gross Group Earnings of the project beneficiaries, the large groups earned as much as four times than that earned by the small groups during January-May, 1994. During the season June- August,1994 the large group earned six times more than the small groups. During the season September-December, 1994 the difference between the small groups and the large groups the lowest; the large group earned only 3 times more than the small groups (Table 7.7).

7.10 Among the districts, beneficiaries of Tiruvananthapuram registered the highest Annual Gross Group Earnings. Large groups earned on an average of Rs.9.28 lakhs and small groups , Rs.1.93 lakhs in Thiruvananthapuram. The corresponding figures in Ernakulam was Rs.1.80 lakhs for small groups and Rs.8.89 lakhs for large groups respectively. In short, on an average small groups assisted by the project earned Rs. 163,000 per annum,as against Rs.112,224 p.a.by non-beneficiaries (Table 7.4).

7.3 PROJECT BENEFICIARIES

7.11 While analysing the effect of finance on the net income of fishermen it was observed that incremental income for an employee owner, or the project beneficiary, was Rs.4207.90. Hence the incremental income in aggregate accruing to 21930 beneficiaries over their

TABLE:7.7

GROSS GROUP EARNINGS OF PROJECT BENEFICIARIES ACROSS SEASONS

(Group size: Large)

(Figures in Rs. Lakhs)

District	Fishing season Jan-May	June-Aug	Sept-Dec
Thiruvananthapuram	2.63	4.17	2.48
Kollam	2.43	3.86	2.31
Alappuzha	2.24	3.56	2.12
Ernakulam	2.52	3.99	2.38
Thrissur	2.20	3.50	2.09
Malappuram	2.13	3.39	2.02
Kozhikkode	2.30	3.65	2.19
Kannur	2.09	3.32	1.99
Kasargode	2.05	3.26	1.95
Average	2.29	3.63	2.17

Source:Survey Data.

employees was estimated as Rs. 923 lakhs per year. This was mainly due to thier stake in the group as the owners of fishing assets (Table 7.8).

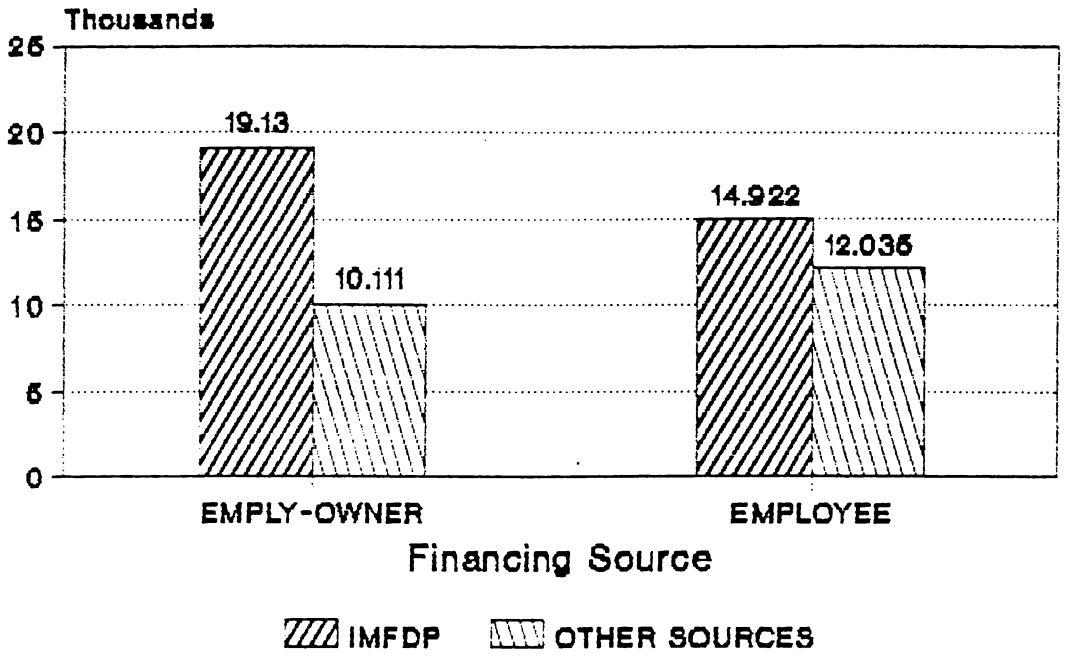
7.12 The employee -owners of the project-assisted groups earned Rs.9018.95 p.a. more than that of fishing groups assisted by private financing sources. Hence on an average project beneficiaries earned Rs.1978 lakhs per year more than the non beneficiaries. This was because of low inter est rates, better functional efficiency of the fishing inputs supplied under the project and relatively better value realisation for their produce (Table 7.9).

7.13 The average net per capita income for both beneficiaries and non beneficiaries was higher in Thiruvananthapuram. This was due to the better bargaining power of the producers and the high consumer demand for the produce. The beneficiaries accrued Rs.857.70 lakhs per year in Thiruvananthapuram followed by Alappuzha with Rs.715.24 lakhs. On an average, 21,930 beneficiaries of the project have accrued a net income of Rs.4258.25 lakhs per annum in Kerala (Table 7.10).

7.14 The employees of the fishing groups assisted by the project earned Rs.2887.10 per year more than the non beneficiaries . This was because when employees in the fishing industry work on a, sharing - the - catch

GRAPH:7.2

AVERAGE NET PER CAPITA INCOME ACROSS FINANCING SOURCES



FIGURES IN Rs.

Table 7.8

ANALYSIS OF AVERAGE NET PERCAPITA INCOME OF PROJECT ASSISTED FISHING GROUPS.

(Fig.in Rs.)

District	Employee-Owner	Employee
Thiruvananthapuram	22,124.30	17,103.75
Kollam	19,452.85	16,249.40
Alappuzha	18,663.45	14,611.55
Ernakulam	19,314.50	17,118.40
Thrissur	18,535.50	14,278.25
Malappuram	18,591.00	13,568.25
Kozhikkode	18,773.50	15,237.00
Kannur	18,502.50	13,183.50
Kasargode	18,214.00	12,950.75
Average	**19,130.20**	**14,922.30**

Source: Survey Data

Table 7.9

ANALYSIS OF AVERAGE NET PERCAPITA EMPLOYEE-OWNER INCOME(ANPCI-EO) ACROSS FINANCING SOURCES

(Fig.in Rs.)

District	Source of finance Project	Others
Thiruvananthapuram	22,124.30	12,206.80
Kollam	19,452.85	10,810.20
Alappuzha	18,663.45	9,266.80
Ernakulam	19,314.50	10,589.85
Thrissur	18,535.50	9,021.40
Malappuram	18,591.00	9,456.35
Kozhikkode	18,773.50	10,218.85
Kannur	18,502.50	9,859.40
Kasargode	18,214.00	9,571.35
Average	**19,130.20**	**10,111.20**

Source: Survey Data

basis they used to get very low realisation for their produce. Further, high input cost, inferior quality of fishing assets, relatively poor efficiency of the craft and gear were responsible for their poor performance.

NON-BENEFICIARIES

7.15 A comparison of average net percapita income of employee owners and employees of fishing groups assisted by other financing sources revealed that employee owners earned Rs.1924 less than that of their employees. This showed that even though they perceived a personal advantage in becoming an owner it did not conform with reality (Table 7.11). The obvious reasons were as follows: Firstly they were not proficient enough to maintain accounts relating to their transactions and did not under stand the extent and depth of the debt trap which they were in. Secondly, the field level observations indicated that the fishermen view the owning of fishing assets as a prestige symbol and hence decisions regarding the mix of funding sources were not finalised after clear delibera tions on the cost- benefit side. Field level observations indicate that, even though the fishing groups claimed to be prompt in repay ment, they tended to delay the principal repayment to the private lenders. This would temporarily increase their surplus but would not relieve them of the interest burden in the long term. The private money lenders were

TABLE:7.10

ESTIMATE OF ANNUAL INCOME ACCRUED BY THE PROJECT BENEFICIARIES IN KERALA

District	ANPCI-EO ('000)	No.of Groups	Estimated Annual Income ('00,000)
Thiruvananthapuram	22.12	4013	887.70
Kollam	19.45	2059	400.50
Alappuzha	18.66	3833	715.24
Ernakulam	19.31	2806	541.84
Thrissur	18.54	2125	394.00
Malappuram	18.59	2304	428.31
Kozhikkode	18.77	2487	466.81
Kannur	18.50	1535	284.00
Kasargode	18.21	768	139.85
Total		21930	4258.25

Source:Survey Data.

Table 11

ANALYSIS OF AVERAGE NET PERCAPITA INCOME (ANPCI) OF NON-BENEFICARIES

(Fig.in Rs.)

District	Employee- Owner	Employee
Thiruvananthapuram	12,206.80	14,253.00
Kollam	10,810.20	13,236.80
Alappuzha	9,266.80	11,836.40
Ernakulam	10,589.85	14,135.00
Thrissur	9,021.40	11,427.10
Malappuram	9,456.35	10,718.25
Kozhikkode	10,218.85	12,147.00
Kannur	9,859.40	10,463.00
Kasargod	9,571.35	10,100.00
Average	**10,111.20**	**12,035.20**

Source: Survey Data

also not very particular about the principal repayments as they continued to get interest for a long time and would have control over operations of the borrower.

INTER-DISTRICT VARIATIONS

7.16 While comparing the Average Net Per Capita Income for employee owners of the beneficiary groups it was found that beneficiaries from Thiruvananthapuram District earned more followed by Kollam and Ernakulam. This was mainly due to better bargaining power of the fishing groups in the districts. The beneficiaries from the northern district of Kerala earned 3% less than the State average. This was because of the increased control of middlemen over their produce.

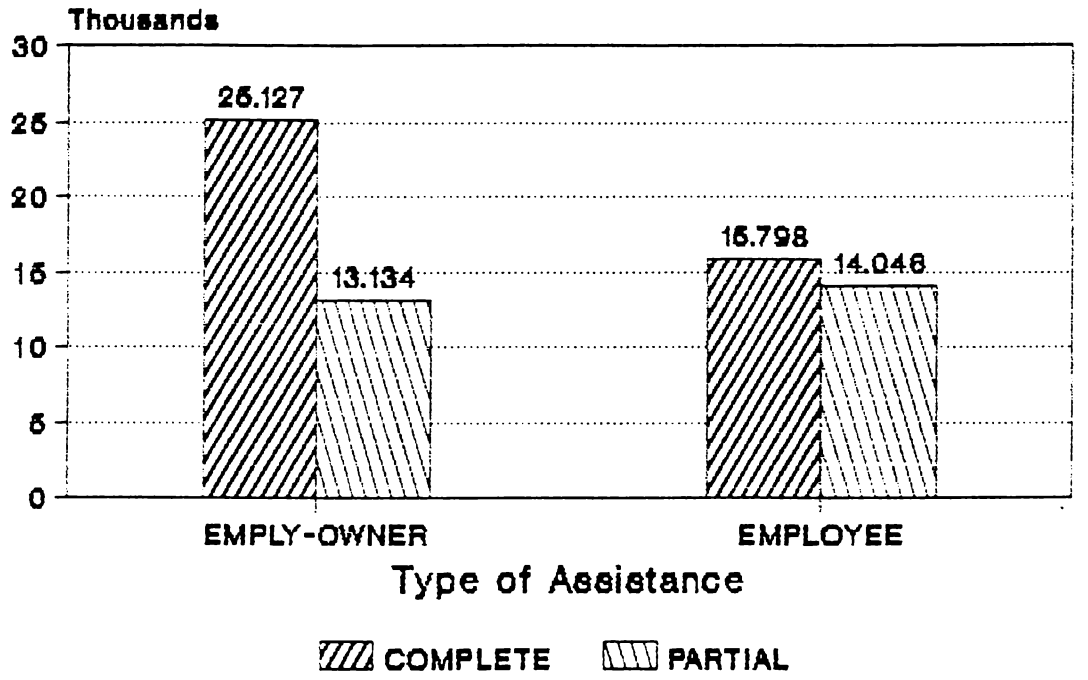
IMPACT OF PARTIAL AND FULL ASSISTANCE

7.17 The employee-owners of fully assisted groups earned Rs.11993.40 p.a. more than partially assisted groups. This was because they had to pay huge amounts as interest to middlemen from whom they had received funds for the purchase of a part of their fishing assets and also for meeting their consumption and working capital requirements (Table 7.12).

7.18 Similarly the employees of fully assisted groups earned Rs.1752.20 p.a. more than those of the partially assisted groups. Employee owners of fully assisted groups

GRAPH:7.3

AVERAGE NET PER CAPITA INCOME AMONG PROJECT BENEFICIARIES



FIGURES IN Rs.

Table:7.12

EFFECT OF PROJECT FINANCE ON THE AVERAGE NET PERCAPITA EMPLOYEE -OWNER INCOME(ANPCI-EO) AMONG BENEFICIARIES:

(Fig.in Rs.)

District	Mode of finance	
	Full	Partial
Thiruvananthapuram	30,749.00	13,499.60
Kollam	27,148.00	11,757.70
Alappuzha	25,122.00	12,204.90
Ernakulam	24,313.00	14,316.00
Thrissur	23,417.00	13,654.00
Malappuram	23,746.00	13,436.00
Kozhikkode	24,754.00	12,793.00
Kannur	23,157.00	13,848.00
Kasargode	23,736.00	12,692.00
Average	**25,126.80**	**13,133.50**

Source: Survey Data

earned Rs.9328.50 p.a. more than its employees. But the average net per capita income for employee owners of partially assisted groups was Rs.912.70 p.a. less than that of its employees. In other words, there was very little advantage of becoming an employee owner by getting funds from the project along with other sources. The partially assisted groups had tried to make the group operation profitable by either delaying the repayment or suspending it indefinitely. This was the major reason for low repayment percentage of loan assistance. Perhaps the true impact of the project was felt only in situations where complete asset financing was made after assessing their requirements correctly.

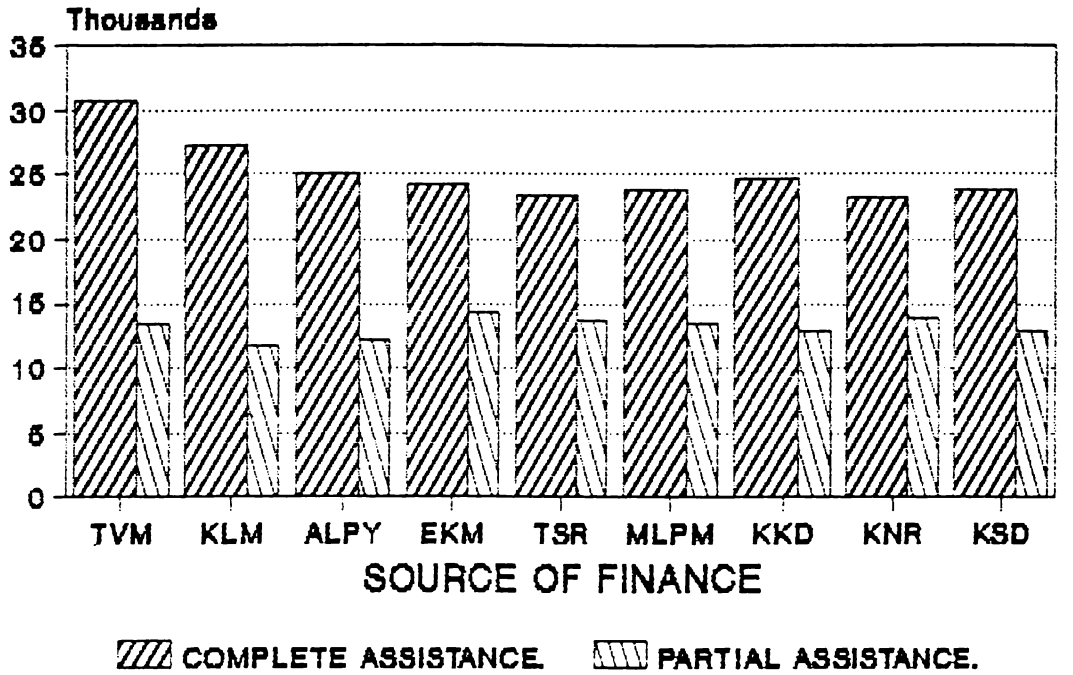
7.19 While comparing the influence of complete assistance over partial assistance across the district, it was observed that beneficiaries from Thiruvananthapuram earned the most followed by Kollam and Alappuzha. This was due to the better bargaining power of the fishermen in those districts and the low interest rate for the project finance.

INTER-DISTRICT COMPARISON

7.20 The area comprising the districts of Thiruvananthapuram, Kollam Alappuzha and Ernakulam present better utilisation of various provisions offered under the project. This was further supported by the findings of the

GRAPH:7.4

AVERAGE NET PER CAPITA INCOME OF EMPLOYEE-OWNERS



Figures in Rs.

Abbreviation:

TVM-THIRUVANANTHAPURAM

KLM-KOLLAM

ALPY-ALAPPUZHA

EKM-ERNAKULAM

TSR-THRISSUR

MLPM-MALAPPURAM

KKD-KOZHIKODE

KNR-KANNUR

KSD-KASARGODE

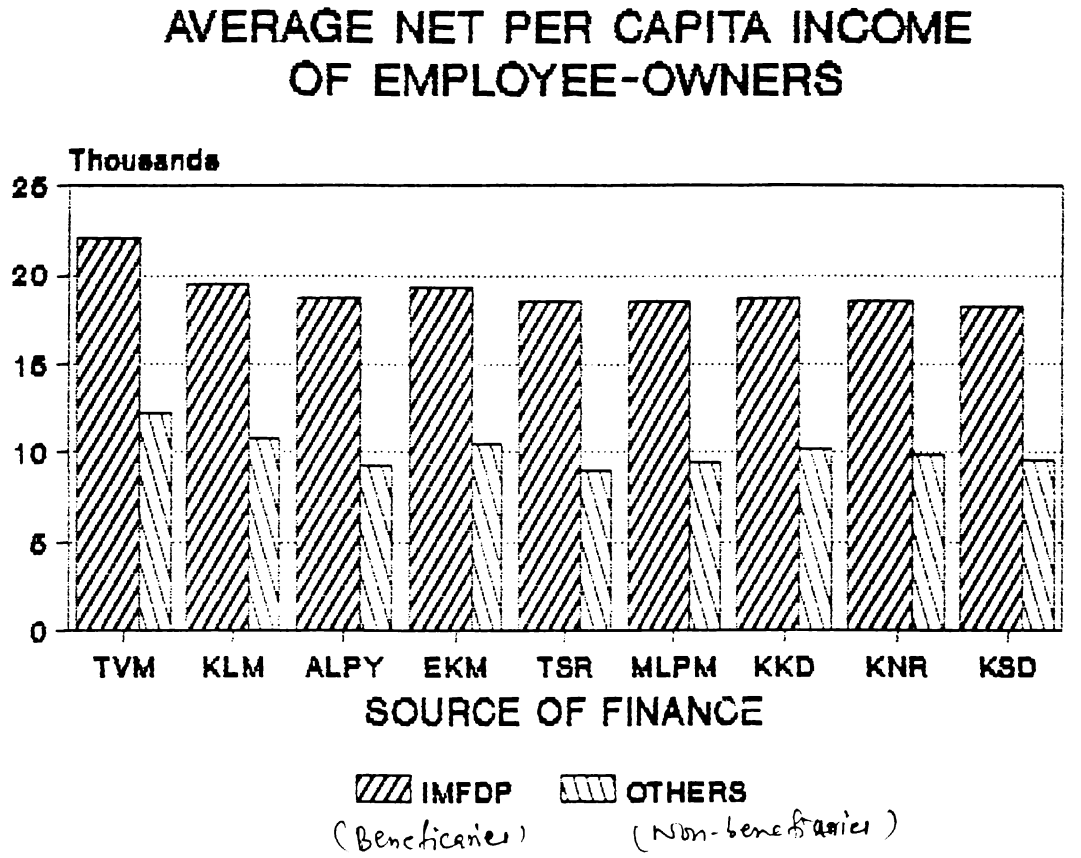
study in terms of the higher average net per capita income of the group. The plank-built canoes with 25 or 40 HP OutBoard Motors, ring seines/anchovy nets were found to be most effective.

7.21 When comparing the Income (ANPCI) accrued by the Employee-owners of project assisted groups with that of groups assisted by 'others',in Thiruvananthapuram,earnings of beneficiary groups was higher by Rs.9,917 p.a . The Employee-Owners or, the beneficiaries of the project earned Rs.5,020.55 more than the Employees of the fishing groups (Table 7.8). Again Employee -Owners of fishing groups fully assisted by the project earned Rs.30,749 (Table 7.12). In terms of percentage, Average Net Per Capita Income of Employee- Owner in Thiruvananthapuram district has registered 22.38 above the State average.

NON- BENEFICIARIES

7.22 The Average Net PerCapita Income of Employee-Owners of fishing groups assisted by 'others' showed that Thiruvananthapuram District topped the list with Rs,12,206.80 followed by Kollam with Rs.10,810.20. On an average, employee-owner of fishing groups assisted by 'others' earned Rs. 10,111.20 per annum. Further, employees of fishing groups assisted by 'others' registered the highest earnings at Thiruvananthapuram with Rs.14,253 followed by Kollam (Rs.13,236.80). On an average every employee of

GRAPH:7.5



Figures in Rs.

Abbreviations:

TVM-THIRUVANANTHAPURAM

KLM-KOLLAM

ALPY-ALAPPUZHA

EKM-ERNAKULAM

TSR-THRISSUR

MLPM-MALAPPURAM

KKD-KOZHIKODE

KNR-KANNUR

KSD-KASAGODE

fishing groups assisted by 'others' earned Rs.12,Ø35.2Ø per annum in Kerala.Again, in Thiruvananthapuram District every employee owners of fully assisted groups earned Rs.17,249.4Ø more when compared to the partially assisted groups. In Kollam the corresponding figure was Rs.15,39Ø.3Ø (Table 7.11).

ASSET HOLDINGS

7.23 The change in the asset base of the artisanal fishermen due to the project was estimated as follows: Fifty nine percent of the beneficiaries received complete assistance and 41% of the beneficiaries received partial was given for input distribution.

7.24 In Alappuzha district 47.Ø% of the beneficiaries acquired assets due to project when they had virtually no assets before. In Thiruvananthapuram 6Ø.Ø% of the beneficiaries had undergone partial changes in their asset base ie. change from owning some asset like net or kattamaram, to full asset base. In some instances, asset base had changed from obsolete to new ones. Districts like Ernakulam, Thrissur and Malappuram had shown a complete change in their ownership pattern among beneficiaries ranging from 68.Ø% to 75.Ø%. In Kannur District the change was much more clear and 8Ø.Ø% of the beneficiary groups moved from zero asset base to acquiring fishing assets, due to project. On an average 59.Ø% of loanees secured

complete sets of fishing assets due to the project (Table 7.13).

7.25 Perhaps a remarkable side effect of the project asset holding has been the improved personal credit-worthiness of fishermen in the local community. Families which used to find it difficult to get rice on credit for a meal , are now able to get credit easily. This increased credit-worthiness has also increased the indebtedness on on the negative side, but has certrainly made their life more comfortable than earlier.

7.26 Hence financial assistance due to project had helped both Employees and Employee-Owners in earning more income, thereby improving their socio-economic status con considerably. The above finding shows a clear difference in the additional income accruing to the beneficiaries on account of the selection of the mode of project finance. The reason for this was found to be the relatively better use of project assistance received at relatively low interest rates, when compared to the utilisation of funds from other sources. The result also indicated that the employee-owners who had gone in for full finance had gained considerably over others.

7.27 It was clear from the above that in the State as a whole, the project assisted groups have earned more income than the other groups.However there were variations across

TABLE:7.13

DETAILS OF CHANGES IN ASSET BASE AMONG PROJECT BENEFICIARIES

(As a percentage of total)

District	Extend of Asset base Change	
	Complete	Partial
Thiruvananthapuram	40	60
Kollam	38	62
Alappuzha	47	53
Ernakulam	68	32
Thrissur	71	29
Malappuram	75	25
Kozhikkode	72	28
Kannur	80	20
Kasargode	78	22

Source: MATSYAFED, Thiruvananthapuram.

districts on this aspect. . This was mostly due to the increased Total Gross Group Earnings per annum and better bargaining power of the groups in the districts of Thiruvanathapuram and Kollam. The total number of fishing days in the fishing villages in Thiruvananthapuram was more than in the other districts. One reason for this might be the superior skill of fishermen in Thiruvananthapuram area. This has contributed to an increased Total Gross Group Earnings for fishing groups in Thiruvananthapuram District and was reflected well in the Average Net Per Capita Income of both beneficiaries and non-beneficiaries.

IMPROVED STATUS

7.28 Fishing inputs supplied under the project helped the beneficiaries to become the owners of the assets. This provided a great psychological boost for them. The element of subsidy of 25 to 40% had relieved them from a substantial amount to be repaid. No other intervention has provided them with such relief.

INTEREST RATE

7.29 One of the most perceptible benefits brought about because of the project, was in the form of savings on interest. The project levied only 14% as interest charges for the loan assistance whereas other private financing sources charged 42 to 3600% p.a. as their interest. This

has improved social worthiness of the project to a consi-darable extent.

LIVING CONDITIONS

7.30 Because of the increased per capita income, a positive change in their lifestyle and consumption pattern has occurred among the beneficiary fishermen households. The beneficiaries are of the opinion that they are spending more on education of their children and entertainment than earlier times.

PHYSICAL STRESS

7.31 The motorisation of country boats carried out under the project has reduced physical effort and the extended of drudgery in the day to day fishing operations. Findings of the study clearly indicated that motorisation has brought in an incremental income of Rs.7,030 p.a. to the beneficiaries.

REPAIRS AND MAINTENANCE OF OUTBOARD MOTORS

7.32 More service centres should be set up to cater to the needs of beneficiaries throughout the State. This will help them to relieve themselves from the exorbitant repairs and maintenance charges of private service centres.

7.33 The beneficiaries of the project earned high average net per capita income only because of the superior quality of inputs received under the project. Fishing nets/webbings available in the open market are of inferior quality when compared to those supplied under the project . Hence it is suggested that more net making centres for enhancing supply of superior quality nets/webbings may be set up in the State.

EXTENSION SERVICE

7.34 The extension machinery has to be strengthened so as to conscientise or enlighten the fishermen about the positive aspects of the project. The northern districts of Kerala did not utilise the project assistance when compared to that of the southern districts. This could be easily rectified with the help of extension campaigns.

MARINE LANDINGS

7.35 The absence of clear information on the primary sales of fish at the beach level was the major weakness of the project. Hence, steps should be taken to collect data on arrivals, primary sales and species composition of marine landings in each village.

LOSS OF ASSET

7.36 There has been many instances of loss of asset during monsoon and beneficiaries have refused to repay their loans. There is no provision in the project for compensation to beneficiaries in case of any loss of fishing assets. Hence it is suggested to incorporate necessary modifications in the Project for accommodating such unforeseen instances.

IMPACT OF THE PROJECT IN CO-OPERATIVISATION:

Sources of borrowing:

7.37 Most of the fishermen belonged to worker category and resorted to borrowing from all available sources for various purposes, primarily for purchase of boat and fishing gear, for working capital requirements and even for consumption needs. Such borrowings were usually from informal sources who had link with either production or marketing intermediaries. So the middlemen had in effect access to supply at a cheaper rate. This factor was analy sed by the scholar and it was estimated that 88% of fishermen had borrowed money from various sources for different purposes. The survey conducted among the fishermen showed that 31% of the beneficiaries of the project borrowed money from money lenders. Majority of the respondents utilised this fund for clearing their debts and for acquiring fishing assets. It is revealed that Fifty five percent of the borrowings were from private

sources (boat owners, money lenders and market intermediaries) who charged exorbitant rates of interest varying from 40 % to 3600 % p.a* (Table 7.14).

Use of funds:

7.38 it was observed that 52% of the funds were utilised for clearing old debts and 32% used for meeting their personal and consumptional requirements. However the majority of the borrowings had gone in to the initial investments in craft and gear. * (Table 7.15).

Performance of Co-operatives:

7 .39 The activities of MATSYAFED, the Apex Co-operative Federation, for improving the socio-economic conditions of fishermen community were studied in detail. The efficiency of Primary Fisheries Co-operative Societies was measured through the following angles:

- In the economic scene, though the primary objective of Apex Federation is to help the Primary Fisheries Co-operative Societies become self-sufficient and viable over a

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Note: * A fisherman borrows money on the basis of daily interest basis. For e.g. a fisherman receives Rs.90/- for a handloan of Rs.100/- and shall be returned at the end of the same day.Hence on a perpectual basis this has taken as 3600%)

TABLE 7.14

SOURCE OF FUNDS FOR FISHERMEN

Source	Percentage
Project assistance	44.Ø
Money lenders	19.8
Market intermediaries	2Ø.2
Private boat-owners	14.Ø
Friends & relatives	2.Ø

Source: Survey data

TABLE 7.15

USE OF FUNDS

Use of borrowed money	Percentage
Initial inputs	75.ØØ
Working capital	18.18
To clear old debts	52.27
Consumption & other personal needs	31.81

Source: Survey data

period of time, hardly any Society ,has met the objective even after a period of 12 years. However most of the Societies have taken up the operation of commecial units, such as Vyasa stores, Matsya Maveli stores, Diesel depots, Kerosine bunks in almost all feasible location, mainly aimed at their short term survivals. Hence it was safely assumed that the project assistance had helped most of the societies to generate surplus over a period of time.

7.40 The level of satisfaction of the members Primary Co-operative Societies of the respondents were analysed on a five Point scale . It was found that 50% of the respondents was satisfied with the activities, 21% indifferent and 29% dissatisfied. Most of the dissatisfied respondents were the agents of money lenders (Table 7.16).

7.41 The ownership of fishing assets was taken as one of the tangible benefits of the projects, as perceived by the respondents. The most important factors disclosed by them for becoming the beneficiaries of the project were;

a) Better earnings

b) Better functional efficiency of fishing crafts and gear suplied under the project and

c) Lower cost of capital.

TABLE 7.16

LEVEL OF MEMBERS' SATISFACTION OF PRIMARY CO-OPERATIVES IN KERALA

Level of satisfaction	Percentage
Highly satisfied	1.80
Satisfied	48.64
Indifferent	20.91
Dissatisfied	19.55
Highly dissatisfied	9.10

Source: Survey data

Degree of co-operativisation

7.42 The degree of co-operativisation is measured among the respondents in terms of coverage, recovery of loans, sale of catch through Societies and member participation in the decision- making process.

(a) It was observed that the coverage of Society among the artisanal marine fishermen was 14.3% and the economic participation of its members was only 5%.

(b) The Pattern of membership showed an increase over the last nine years occassioned by politicisation following changes in Government of the State .

(c) Sale of catch through Societies was only marginal and covered less than 1% of total primary sale of fish in Kerala. The participation of artisanal marine fishermen in beach level auction introduced by the Society was less than 20%.

(d) Recovery of loan, on an average, was 42% which was considered good when compared to previous experiences.

(e) The member participation in the decision-making process was negligible since MATSYAFED followed top to bottom approach.

(f) The members elected to the Board were not real representatives of the fishermen. Hence, the monitoring of the activities of MATSYAFED and Co-operative Societies through elected Boards had not delivered the desired results.

TABLE 7.17

EXPECTATIONS OF FISHERMEN THROUGH PRIMARY CO-OPERATIVES IN KERALA

Parameter	Percentage	Rank
Provision of credit	22.9	I
Timely maintenance assistance for fishing implements	21.2	II
Provision of inputs to more groups and priority treatment on the basis of specific issues	19.2	III
Regular supply of inputs through Vyasa Stores	18.1	IV
Community Development	10.9	V
Administrative control of Primary Co-operative Societies	7.7	VI

Source: Survey data

TABLE 7.18

HINDRANCES IN THE OPERATION OF CO-OPERATIVE SOCIETIES

Issue	Percentage
Political interference	35.7
Delay in getting assistance	21.5
Inadequacy of field staff	32.4
Difficulty in attaining membership	10.4

Source: Survey data

Major expectations, hindrances and suggestions:

7.43 Provision of credit, regular supply of fishing inputs and other accessories and wider coverage of the project were the major expectations. Only 7.7% of the respondents were interested in the administrative control of the Societies (Table 7.17).

7.44 While analysing the major hindrances in the operation of primary Societies, 35.7% of the respondents identified political interference as the main obstacle. (Table 7.18). Most of the respondents were of the opinion that easy credit facilities, regular supply of fishing inputs, less political interference and adequate marketing support would induce the fishermen to become an active member of the Society (Table 7.19).

GROUP OWNERSHIP

7.45 Fishing inputs were supplied to a group of 5 to 30 mainly to inculcate a sense of co-operativisation among fishermen. On the positive side it could be mentioned that the inputs being shared commonly by a group was a check on misusing the sale in the form of selling off at will by an individual. On the negative side, the group leaders being noctional owner, assumed the sole responsibility of repay ment of loan. Hence in many instances, the group leader had assumed the ownership fulfilling the requirement of the project. Intra-group quarrels had led to administrative problems and wastage of time. The low level of lit-

TABLE 7.19

SUGGESTIONS FOR INCREASING THE EFFICIENCY OF CO-OPERATIVES

Suggestions	Percentage
Active participation of fishermen	16.9
Easy credit facilities	16.5
Provide marketing assistance across seasons	16.5
Less political interference	15.Ø
Regular supply of fishing inputs through Vyasa Stores	13.Ø
Organise regular meeting of members and officials	11.9
Commence savings scheme	6.Ø
Others	4.2

Source : Survey data

eracy and the "hunter-gather" approaches of fishermen were the major reasons for this dismal situation. However it is for the first time in Kerala that an integrated approach has been made to tackle the problems of fishermen.

Performance Appraisal

7.46 At present there is no performance appraisal for the Societies. This has badly reflected in the functioning of most of the Societies. Hence the scholar developed a model by giving weightage to primary sales, financial performances, economic participation of members and business surplus (Exhibit 7.2).

7.47 The findings of the study clearly indicated that the Co-operatives were functioning mostly due to project assistance. Hence it could be safely interpreted that the project paved the way for a strong Fisheries Co-operative movement.

IMPACT OF THE PROJECT ON THE FISH MARKETING SYSTEM

Beach price:

7.48 The average beach price of fish in 1984 was only Rs.1.90 per Kg. and in 1994 the price had gone up to Rs.9.50 per Kg. This could be attributed to a general rise in prices, market conditions and to some extent to the better bargaining power of the group.

EXHIBIT:7.2

PERFORMANCE APPRAISAL FOR PRIMARY FISHERMEN DEVELOPMENT AND WELFARE CO-OPERATIVE SOCIETIES

The scores gained on the following indicators with their respective weightages would decide the relative performance of the FDWCS.

ACTIVITY	WEIGHTAGE
1. Activity spectrum- beach level auction	40
2. Productive members	20
3. Financial performances	20
4. Business surplus	10
5. General	10
Total	100

Explanations

Beach level auction : Relative performance at the Regional Level

Productive members : $\frac{\text{Productive members in the society}}{\text{Productive members in the area.}}$

Business surplus : Relative assessment at the State level

Percentage of beneficiaries: $\frac{\text{Nos.benefitted}}{\text{Total members.}}$

Financial performance : $\frac{\text{Amount paid to MATSYAFED}}{\text{Amount due}}$

General : The major indicators of operationalisation of the concept of Fisheries Co-operatives like supporting activities taken up, accounts records, meeting of Executive committee members, general body meetings and so on.

7.49 The beach level auction system introduced by the project through Matsyafed had helped the beneficiaries to fetch a reasonable price for their produce. Studies show that the share of beach level price to consumer vis-a-vis the value of fish as a percentage of beach level price to consumer price for the beneficiaries had gone up from 30% in 1985 to 60% in 1994.

7.50 Since the formation of Fisheries Co-operatives the beneficiaries are assured of the money from their catch through auction system. Formerly they had to forsake some amount as trade discount in the process of bargaining. Further the auction system scrapped the delay in getting payment from the merchants. The auction system introduced by the project had freed the beneficiaries from the bondage to traders.

MARKET SHARE

7.51 While it was clear that returns to fishermen had definitely increased mainly as a result of complete ownership of assets and gradual reduction of the control of middle men over their produce, the project is yet to introduce a marketing system for the beneficiaries. This was mainly due to the low volume of catch that was being auctioned through the project appointed auctioneer. The high level of indebtedness to middlemen left the beneficiaries with little say in the disposal of their catch.

It was observed that many of the beneficiaries did not auction their catch through the project appointed auctioneers. This was because fishermen who had obtained loans from them had in effect sold their catch in advance. It is therefore suggested to introduce an element of working capital assistance in the form of a revolving fund for meeting their day to day expenses.

7.52 In order to increase the market share, MATSYAFED fixed a target of 30% of primary sales for each Society. This is hardly being met now due to lack of follow up from MATSYAFED and the absence of incentive for encouraging the beneficiaries to participate in the auction.

MARKETING INTERMEDIARIES

1. AUCTIONEERS

7.53 The quantity of fish auctioned by beach auctioneers varied across fishing seasons. During flush season they auctioned between 15 tonnes and 20 tonnes of fish valued at Rs.1.16 lakhs to Rs.1.55 lakhs every month. During lean months, quantities handled dropped by 33% (9 to 10 tonnes) valued at Rs.99,000 to Rs.1.11 lakhs during the average months, it was only 12 to 13 tonnes which was valued between Rs.1.14 and 1.23 lakhs (Table 7.20).

TABLE:7.20

QUANTITY TRANSACTED BY VARIOUS INTERMEDIARIES

(FIGURES IN TONNES)

Fishing Season	Auctioneer	Wholesaler	Retailer	Vendor
Flush	115 to 120	135 to 150	2.5 to 3.0	0.9 to 1.0
Lean	7.9 to 10	40 to 50	0.5 to 0.6	0.3 to 0.4
Average	112 to 113	175 to 190	1.5 to 2.0	0.6 to 0.7

TABLE:7.21

UNIT VALUE OF FISH TRANSACTED BY VARIOUS INTERMEDIARIES

(FIGURES IN RS.)

Fishing Season	Auctioneer	Wholesaler	Retailer	Vendor
Flush	7.75	10	14	17
Lean	11.00	20	23	26
Average	9.50	15	18.50	21.50

7.54 Typical commission ranged between 3 to 5% though in some cases it was as high as 10% . Commission remained constant across seasons. In some cases, Primary Fisheries Co-operative Societies organised by MATSYAFED and other Voluntary Organisations employed auctioneers and gave them a fixed pay every month.

7.55 In terms of number of buyers, 30% of them were wholesalers, 40% retailers and the remaining 30% vendors, institutional buyers and in a few cases, household consumers. However, in terms of quantity, wholesalers transacted more than 75.0% of total catch.

2. WHOLESALERS

Procurement pattern

7.56 Forty percent of the wholesalers also procured fish on a periodic basis from neighbouring States. The important
centres opted by them for procuring fish were Vellankanni Nagercoil, Nagapattanam, Panaji, Mangalore, Uduppi and Tuticorin

7.56 Wholesalers handled around 135 to 150 tonnes of fish every month during flush season , 40 to 50 tonnes during lean months and 75 to 90 tonnes during average months. (Table 7.20).

Volume of transaction

7.57 In terms of value, wholesaler transacted on average, Rs.13.50 to 15 lakhs per month during the flush season. Rs.11.25 to 13.50 lakhs during average months and it dropped to Rs.8 to 10 lakhs per month during the lean season. The drop in volume of transaction between the flush and the lean season, in terms of quantity ,was around 68.0%.

7.58 The average unit value of fish in the flush season was Rs.10 kg while in the lean season it went up to Rs.20 per kg. Thus, the increase in the unit price of fish between the flush and lean season was by 100% and between flush and average months by 50%.

Regional variation

7.59 There exits a significant variation in the quantities handled by wholesalers in the north and south of Kerala. The quantity of fish transacted by wholesalers in the north of Kerala was 170 to 180 Tonnes every month during flush season, 52 to 65 tonnes in the lean months and 93.75 to 112.50 tonnes in the average months. Whereas the wholesalers in south of Kerala handled 100 to 120 tonnes every month during flush season, 28 to 35 tonnes in lean months and 56.25 to 67.50 tonnes in average months. Thus, on an average, the wholesalers in the north of Kerala transacted around 25% more than their counterpart in the north of Kerala across seasons.

7.60 Distinction observed between northern and southern locations was with respect to range of fluctuations in quantities dealt in by the wholesaler in the flush and the lean seasons. In the north of Kerala, drop in the quantity of fish transacted between the flush and the lean season was 67%, and in the south , by 71%. This could be attributed to the higher percentage (30%) of outstation procurement by wholesalers in the north than in the south of Kerala

Mmajor species

7.61 The major species delt in by them were mackerel, which accounted around 25% of total value of transactions, followed by sardine (20%) and shrimp (10%) . Other minor species handled by them were anchovy, tuna, carangid and ribbonfish .

Credit period

7.62 Sixty percent of wholesalers availed credit when they procured fish from their suppliers. The average credit period was around 7 days.

7.63 Ninety five percent of wholesalers extented credit to their customers who were wholesalers in other locations, retailers, vendors exporters and processors. It was observed that retailers and vendors were their major customers. They accounted for 75% to 80% of the wholesale transactions. 15-20% of transactions were accounted for by exporters and processors

and the remaining by large institutional buyers. However, in terms of quantity and value of transactions, exporters and processors represented an important buying segment.

7.64 Wholesalers extended the maximum credit to the exporters and processors for an average period of one month. Large institutional buyers got 10 to 15 days credit while retailers and vendors only 3 to 5 days credit.

3. RETAILERS

Procurement pattern

7.65 Eighty percemt of retailers procured fish through beach level auctions while 20% procured fish through wholesale auctions. There was no perceivable difference in the procurement pattern of fish between locations in the north and in the south of Kerala. Twenty percent of retailers were engaged in the distribution of both fresh and dry fish in Kerala.

7.66 On an average, during flush season the monthly transaction of retailers was between 2500 and 3000 kg of fish, 500 kg and 600 kg in lean months and on average months, their transaction was around 1500 to 2000 kg . (Table 7.20).

Volume of transaction

7.67 In terms of value, on an average, retailers transacted Rs.35,000 to 42,000 every month month during flush season. During average months their transactions was Rs.28,000 to 37,000 , and during the lean months, Rs.12,000 to Rs.14,000

7.68 The drop in volume of transaction between the flush and the lean season, in terms of quantity was 80%. In terms of value, the reduction in volume of transaction was over 60%.

7.69 The average unit value of fish during the flush season was Rs.14/- per kg while in the lean season, Rs.23/-per kg. Thus the increase in the unit price of fish between the flush and lean season was 64%.

Regional variations

7.70 The distinction between the locations in the north and in the south of Kerla was significant with respect to range of fluctuations in quantities transacted by retailers during the flush and the lean seasons. In the north of Kerala, average drop in quantity transacted between the flush and the lean season was between 70 and 75% and in the south of Kerala, it was around 95% . Similarly,the average drop in quantity transacted between the flush season and average months was, 25 to 30% in the north and 45 to 50% in the south. This was because of regular supply of fish from the wholesalers in the north than in the south.

7.71 In terms of value, it was observed that the increase in unit value of fish between the flush and lean season was marginally higher in the south than in the north of Kerala.

Major species

7.72 The major species of fish , in terms of value were mackarel, which accounted for 30 to 35% of total transactions followed by sardines and perches, which accounted for 20 to 25% .

Credit periods

7.73 Seventy five percent of retailers availed credit from their suppliers . The average credit period was around 2 to 3 days. It was observed that retailers in the north availed 1 to 2 days more credit than those in the South of Kerala.

7.74 Ninety percent of retailers extended credit to their customers. The average credit period was 4 to 5 days. The household consumers constituted between 75 to 80% of their transactions. In the north, almost 30% of their sale was through vendors. Household consumers accounted for around 60 to 65% of their transactions and the remaining 5-10% , institutional buyers. In the south, more than 80% of their sale went to household customers while 10% of total transactions went to vendors.

7.75 Of the total sale by retailers to vendors, 65 to 70% accounted for direct sales and the remaining 30 to 35% through auctioneers.Auctioneers' commissions ranged from 6 to 10% of auction value.

7.76 House hold consumer were given a credit for 14 to 30 days, institutional buyers 7 days and for vendors, 1 to 2 days.

VENDORS

Procurement pattern

7.77 Fifty percent of vendors procured fish directly through beach auctions. However, this depended on the proximity of the landing centre to consumption point. At Vizhinjam beach, a significant proportion of the buyers were vendors as the landing centre lied fairly close to Thiruvananthapuram City. Procurement from beach auctions by vendors also depended on time specific factors like `Chakara` ie. the mud bank phenomenon. It was observed that percentage of vendors procuring from auctions was much higher in the south as compared to the north of Kerala. This was because beach auctions in the north of Kerala were cornered by a few large wholesalers .

7.78 Twenty percent of vendors usually procured fish from wholesale auctions and the remaining , from retail auctions or retail markets. However, it was observed that

the number of vendors procuring fish from wholesale and retail auctions was much lower in the south than in the north of Kerala. Twenty percent of the vendors handled both fresh and dryfish varieties. The percentage of selling dried fish was higher by 30% in the south of Kerala.

Volume of transaction

7.79 During the flush season, vendors had monthly transactions of 900 to 1000 kg of fish, 300 to 400 kg during the lean months and 600 to 700 kg during average months.

7.80 In terms of value, vendors transacted Rs.15,000 to 17,000 every month during the flush season, Rs.8,000 to 10,000 during the lean season and Rs. 13,000 to 15,000 in the average months.

7.81 The drop in volume of transaction between the flush and the lean season was 63% in terms of quantity, 50% by volume. The average unit value of fish during the flush season was Rs. 17/- per kg while that during lean season, went up to Rs.26/- per kg.. The increase in the unit price of fish between the flush and lean season was around 53%.

7.82 The drop in the quantities transacted by them between the flush and lean season was 80% for the south and north by 60%. This was attributed to the regular supply of fish in the north than in the south of Kerala.

Credit periods

7.83 Ninety percent of vendors interviewed, availed credit from their Suppliers. The average credit period was between 3 and 4 days. The household consumers constituted the largest segment for vendors (95%). Average credit extended by venders to them was between 15 and 30 days and small institutional buyers (small hotels, Arrack shops, hostels etc.) 2 to 3 days.

7. HOUSEHOLD CONSUMERS

Profile

7.84 Kerala is a high demand area for marine products. It is estimated that the demand for marine products will be 7 lakh tonnes per annum and about 90% of the population of Kerala is consumers of marine products.

7.85 Kerala accounts for the highest purchasing power due to remittance from Non-Resident Indian. People in Kerala are oriented towards better life style and are constantly looking towards upgrading their life style. Per Capita expenditure in Kerala is higher than the national average and Kerala is a well known test market for new product launches. The market penetration of both consumer durables and non durables are higher than the national average. About 3.41 lakhs of officers/businessmen/executives are working in Kerala . About 14 lakhs of people are in the income category of Rs.3000-5000 p.m. and about

GRAPH:7.6

CLASSIFICATION OF CUSTOMERS
(OCCUPATION WISE)

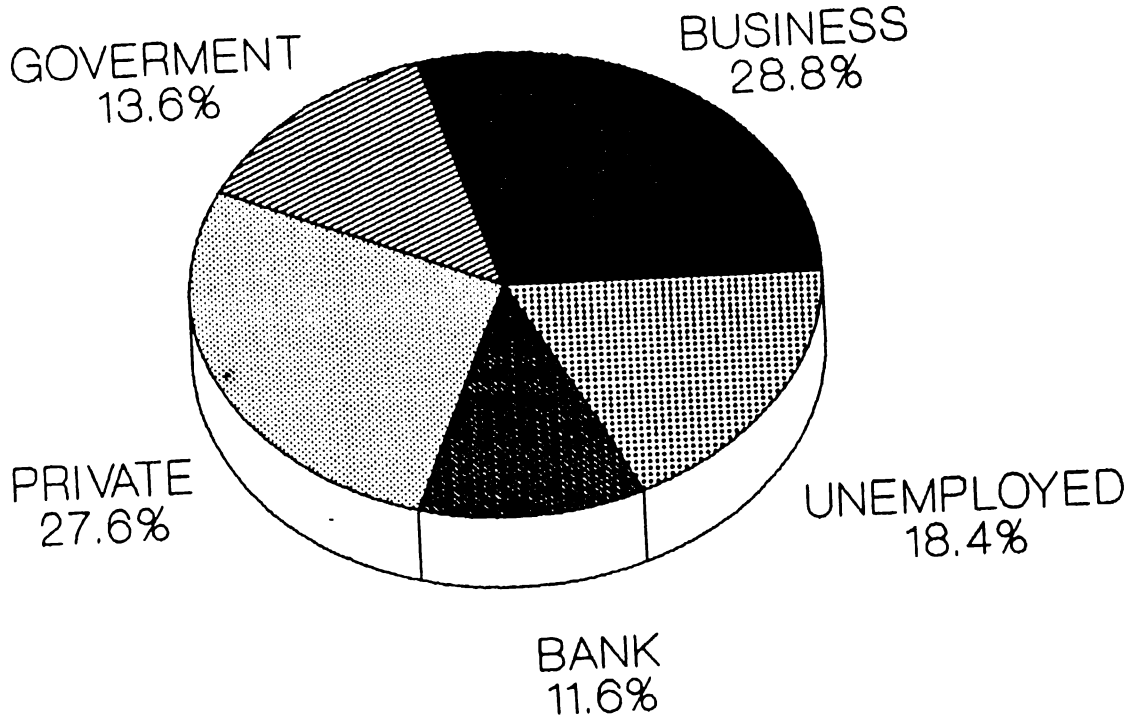


TABLE:7.22

AVERAGE MONTHLY CONSUMPTION OF SEAFOOD FOR HOUSEHOLD CONSUMERS

Income Group	Average Monthly Consumption Value
Up to Rs.3000	Rs.300-350
Rs.3001-4000	Rs.351-450
Rs.4001 and above	Rs.451 and above

Source:Survey Data.

TABLE 7.23

BUYING PATTERN OF SEAFOOD AMONG HOUSEHOLD CONSUMERS

	Monthly income		
	Upto Rs.3000	Rs.3001-4000	Rs.4001 & above
Retail Markets	55%	46%	33%
Vendors	27%	40%	45%
Cold Storages	6%	10%	20%
Directly from the beaches	12%	4%	2%

Source:Survey Data.

GRAPH:7.7

CLASSIFICATION OF RESPONDENTS
(EDUCATION WISE)

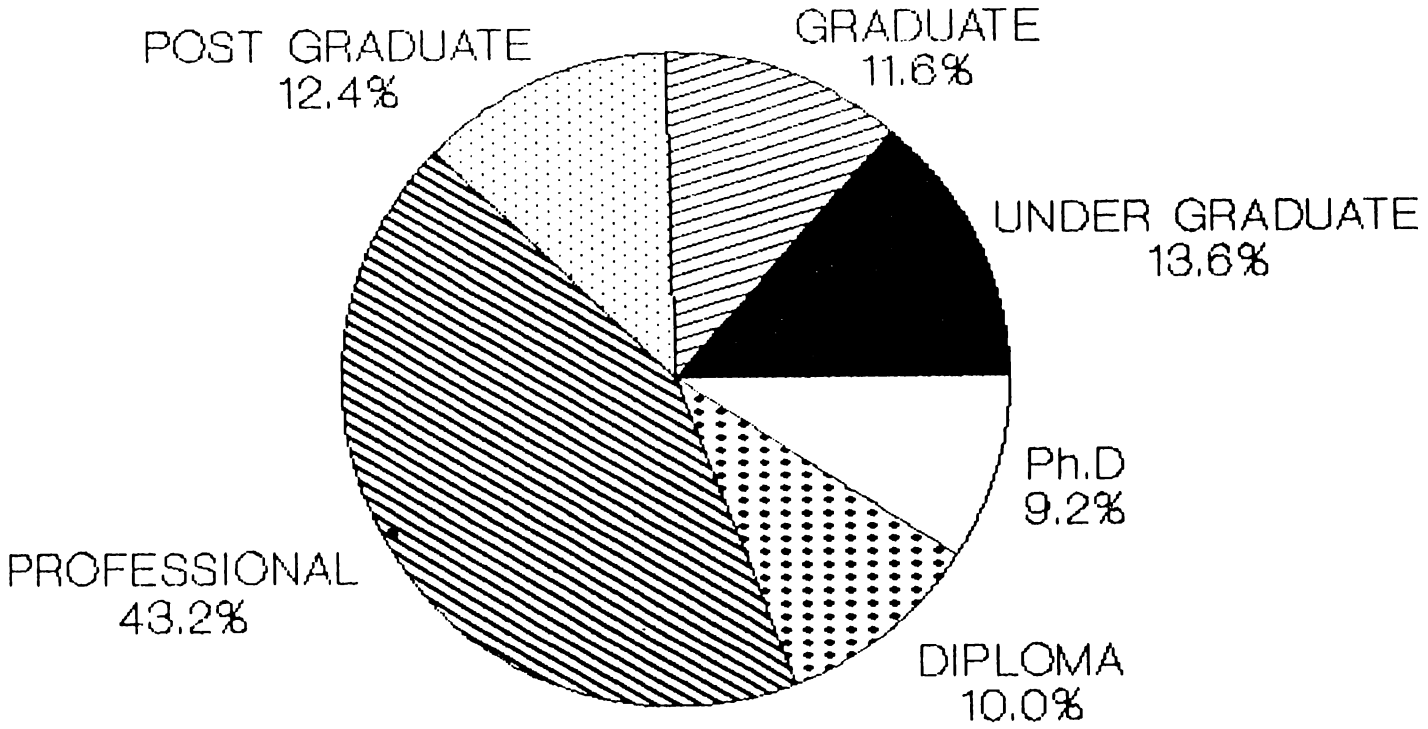


TABLE:7.24

FREQUENCY OF PURCHASE OF SEAFOOD AMONG HOUSEHOLD CONSUMERS

	Monthly income		
	Upto Rs.3000	Rs.3001-Rs.4000	Rs.4000 and above
Daily	52%	50%	30%
Once in 2 days	30%	30%	20%
Twice a week or greater	18%	20	50%

Source:Survey Data.

8.63 lakhs have a monthly income of Rs.500/- and above. (Source; National readership survey-V 1995-96 and India Readership Survey 1995.).Twenty eight percent of the respondents selected for the survey was employed in the private sector and 12% from the banking sector. Again,43% of the respondents were professionals having monthly income of more than Rs.4500 p.m (Graph 7.6 & 7.7)

7.86 The average monthly consumption of sea food per household was 15 kg ,valued at Rs.375/- per month. While the consumption quantity did not have any relation to household income, but the consumption value had varied with monthly income levels of respondents. On an average, consumer price of fish had varied from Rs.20/- per kg during flush season to Rs.30 during lean season and in the north of Kerala,it went up 10% more during lean season (Table 7.22).

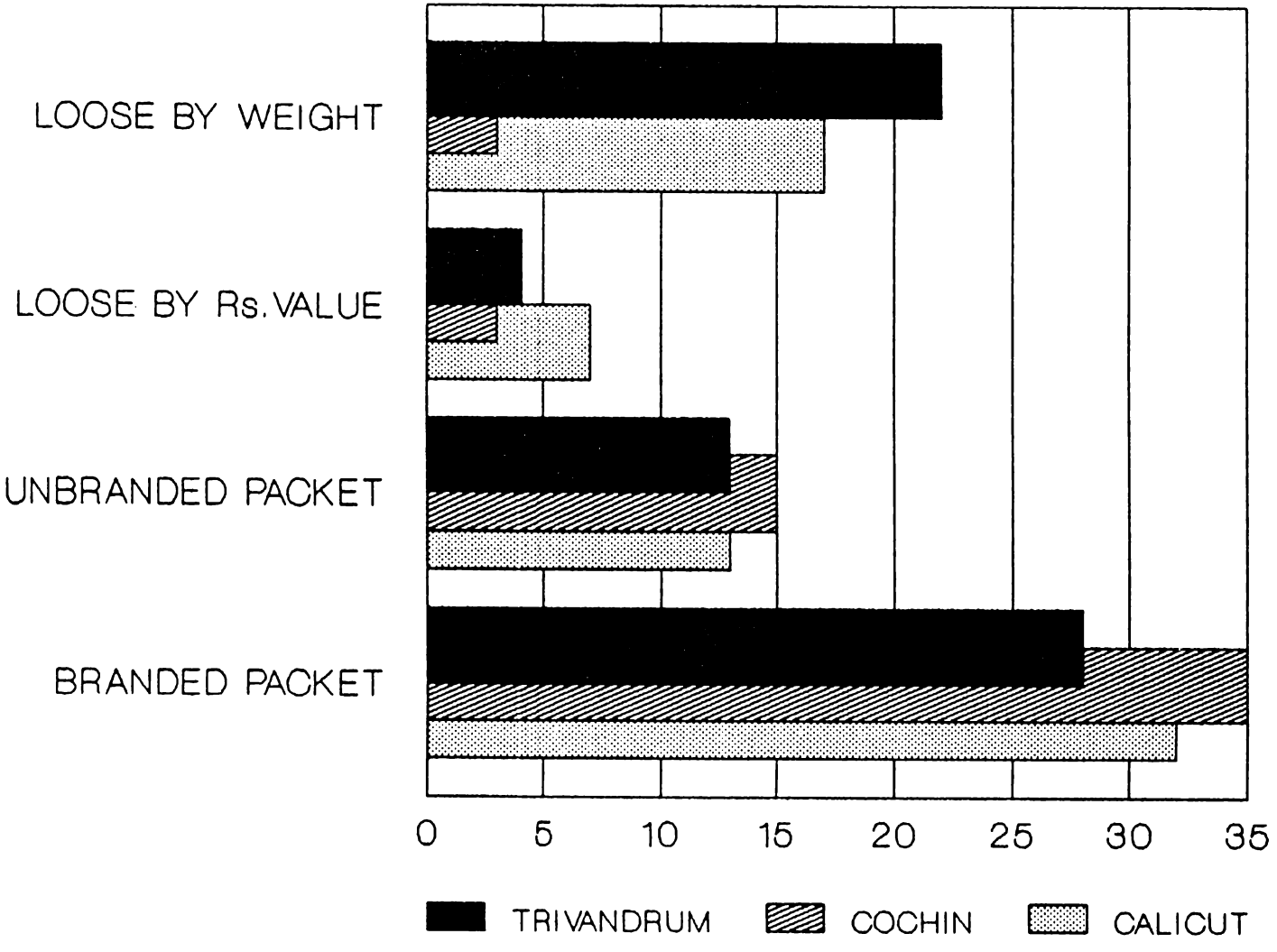
7.87 The drop in the quantity of sea food consumed during lean months as compared to flush months, was 50% The drop was higher for consumers in the monthly income group of Rs. 3001 to Rs.4000. In terms of value, the drop in consumption between flush and lean season was 100%. Again, the drop was higher in the income groups of Rs.3,001 to Rs. 4,000.

Buying pattern

7.88 Forty percent of household consumers procured sea food mainly fish from retail markets, 35% from vendors, 20% from cold storages and 5% directly from the beach. As the monthly household income increased, there was a

GRAPH:7.8

DESIRED FORM OF THE PRODUCT



shift away from the retail market towards vendors and cold storages .The high income group customers went for purchasing fish less frequently and 20% of them preferred to buy fish from cold storages(Table 7.23 & 7.24).

7.89 Main species consumed by them were sardines,mackerel, seer, carangids, and shrimp. Fifty percent of the consumers interviewed from the income groups of Rs.4000/- per month and above consumed seer fish frequently . Lower income groups consumed more of sardine and mackerel. Majority of the household consumers (40%) purchased sea food every day.

Consumption pattern

7.90 Fifty five percent of household customers consumed only fresh fish. Fifteen percent of the customers preferred to consume dried fish in the absence of quality sea food of their choice and 30%, both fresh and frozen marine products.

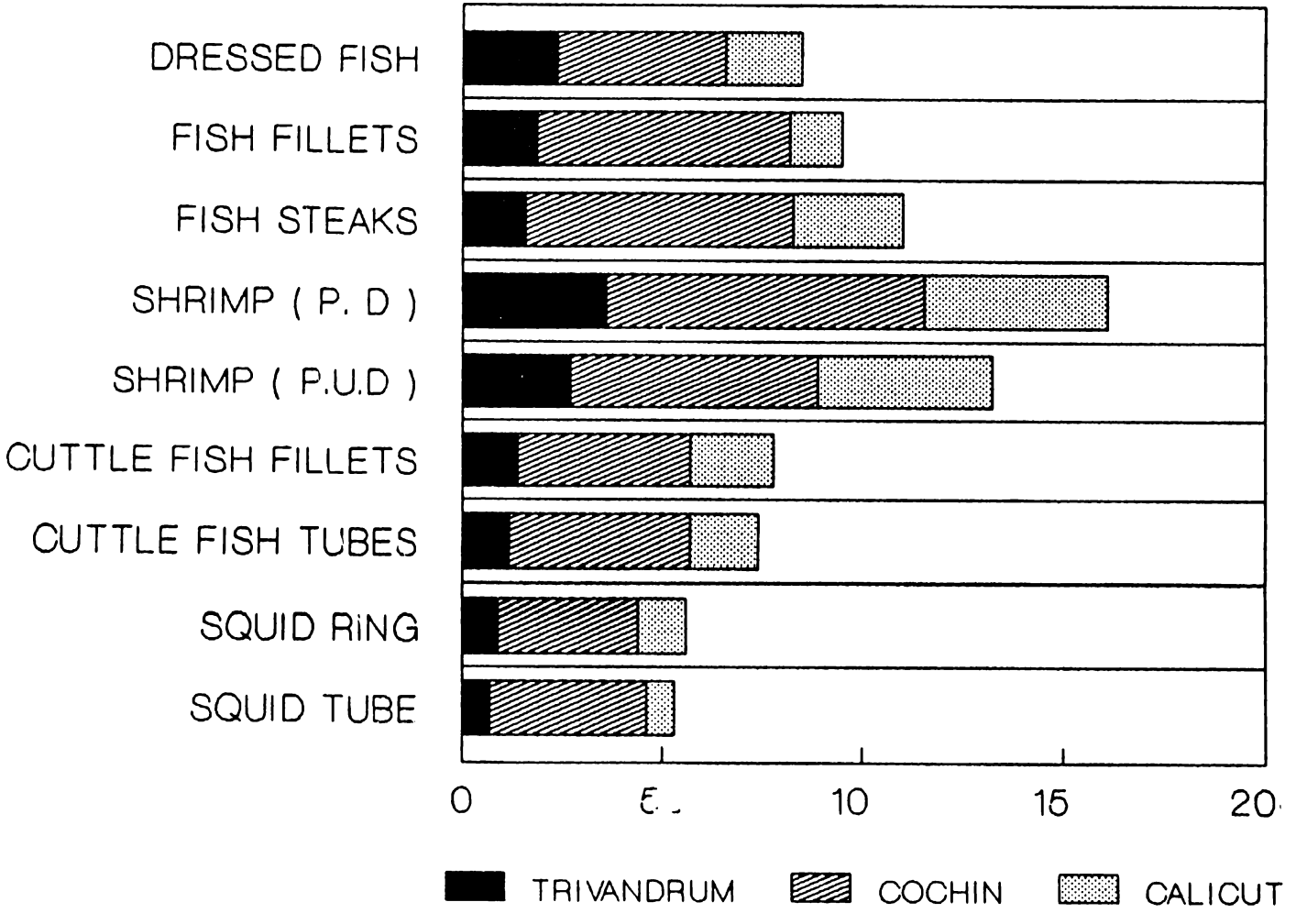
7.91 It was observed that the quantities of dried fish consumed by high and medium income groups was negligible. The consumption of frozen fish from cold storage was very high among the higher income groups.

Frozen fish and fish products

7.92 Twenty five percent of the customers of frozen marine products, was of the opinion that quality of fish was good , 40% , just satisfactory and remaining 35%,

GRAPH:7.9

CUSTOMER PREFERENCES FOR DIFFERENT STYLE OF FISHERY PRODUCTS



NO.OF RESPONDENTS

dissatisfied. Most of the respondents were ready to buy branded processed fishery products from a reputed agency. Further, 30% of the respondents believed that prices of marine products available at the cold storage reasonable.

Customers preference

7.93 Customers preference for frozen fishery products was analysed by the scholar in detail. Majority of the customers preferred to buy fish steaks, fish filletes, dressed fish and shrimp. Freshness and hygiene scored high while testing the desired attributes of the product. As perceived by the respondents, freshness was connected with the odour and appearance of the product and hygeinical meant fresh and branded (packed neatly). (Graph 7.8, 7.9 & 7.10)

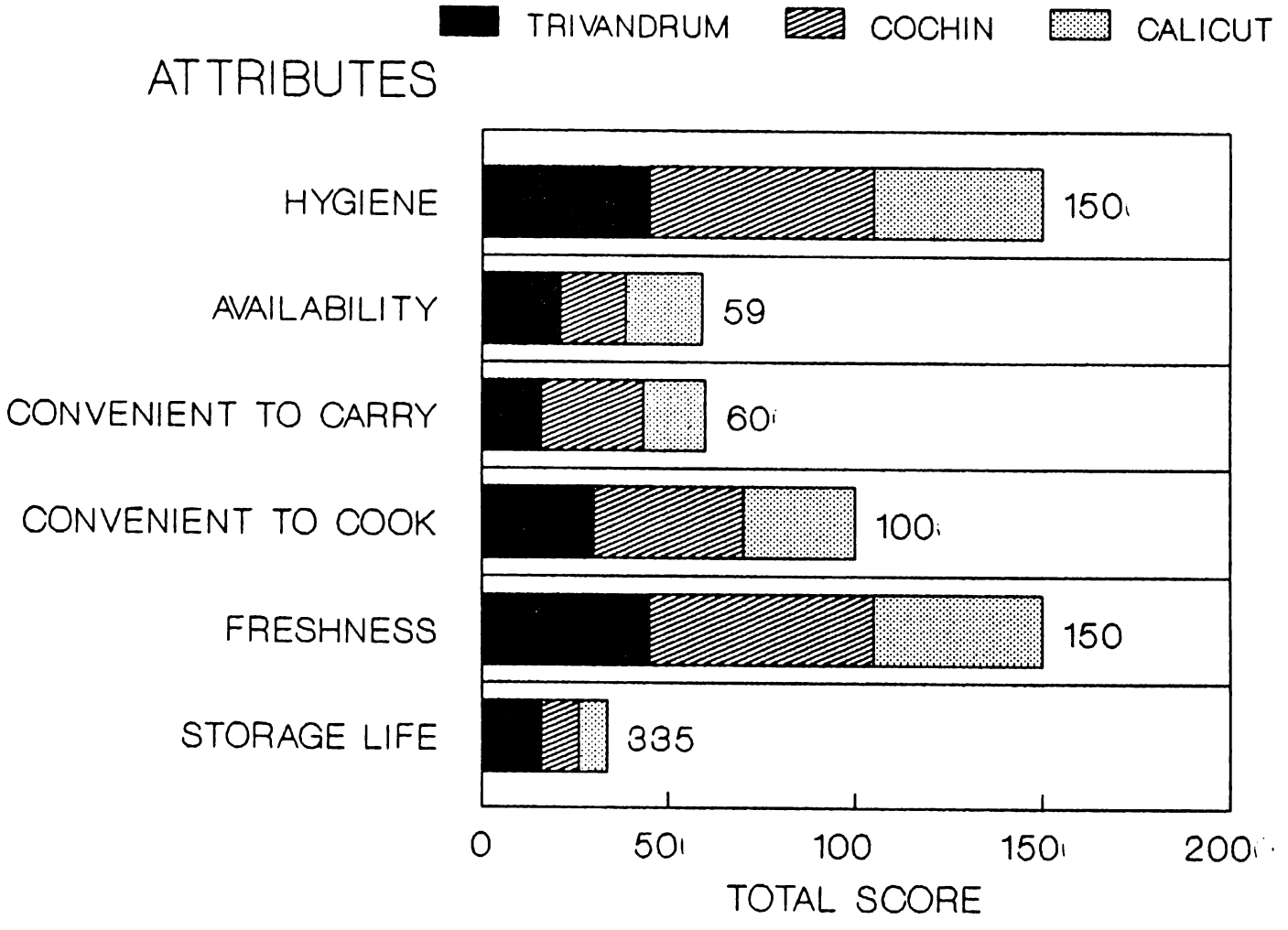
7.94 The customers preferred to buy the processed fish products in 500 gms. and 1000 gms.packets wrapped in polythene papers leaving one side transparent. Customers were ready to pay more for better quality product. However there was an apprehension among the customers in general, that frozen products were not fresh.

PRICE SENSITIVITY

7.95 It was found that the middle income groups i.e. monthly household income of Rs.3001 to Rs. 4000 was the most price sensitive segment. While all respondents were insensitive to a price increase of 10% with respect to

GRAPH:7.10

VARIOUS ATTRIBUTES OF FISHERY PRODUCTS



current prices, at a proposed price increase of 50%, middle income group prefered to reduce their purchase quantities of fish by 30%, lower income groups to 20% and upper income groups to 5%.

7.96 At a proposed price increase of 100%, the middle income category intended to reduce purchase quantities by 60%, the lower income groups to 45% and the higher income groups to 20%.

7.97 It was found that proposed increase in purchase quantity with reduction in the price of fish was higher among middle income groups. At a hypotheti cal price reduction of 10%, purchase quantities of all income groups were more or less unaffected. However, at a reduction of 25%, the middle income category proposed to increase purchase quantity by as much as 50% whereas the corresponding figures for the lower income and upper income groups were 40% and 25% respectively.

7.98 At a proposed reduction in the price of fish by 50%, the middle income group increased purchase quantity by 50%, the low income and high income groups by 50% and 30% respectively.

7.99 As the middle income consumers typically consume higher value fish than lower income consumers, an increase or decrease in percentage terms translates to a larger difference, when compared to other income groups.

CHAPTER:VIII

SUGGESTED MARKET INTERVENSION STRATEGY FOR MATSYAFED:

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8.1 The market intervention carried out during 1985-86 under the Project incurred a loss of Rs.6 lakh. In 1990 a similar intervention incurred a loss of Rs.60,000/-. This was because of the lack of integrated planning and operation guidelines. Hence the scholar suggested few changes in the project guidelines and designed a marketing strategy for MATSYAFED. The scholar again, proposed a set of activities to be undertaken by the MATSYAFED within a period of 1-10 years.

8.2 It is recommended that MATSYAFED should intervene at landing centres through Primary Fisheries Co-operatives with the intention of offering the fishermen an alternative market with remunerative returns. The fish thus procured should be auctioned at a pre-decided and advertised frequency . To help them tide over market fluctuations, Primary Fisheries Co-operatives should establish cold storage facilities. This will help balance demand - supply fluctuations to a certain extent.

8.3 It is recommended that procurement of fish at cold storage points to be done only for the members of Primary Co-operative Societies. This will help MATSYAFED's "Co-operativisation" efforts as it will be perceived as a tangible benefit by all fishermen. And inturn cold storages may offer a better price for their produce. To begin with, intervention will be possible only at a few landing centres. Existing facilities for storage may also have to be considered, to reduce investment. Over a period of time, however, MATSYAFED can make itself a significant force in the market,acquiring atleast 30% of the market share on the primary sale of fish.

8.4 Guidelines should be issued to the cold storage points for setting the price to be offered to producers, floor price for auction, indication of quantities to be transacted and so on. The price offered to fishermen should ideally be a fixed percentage of the estimated final selling price. This percentage may vary between different storage points depending on location specific traits. However, within these guidelines, freedom should be given to personnel at the storage points for deciding on prices, procurement and so on. This is essential due to the highly dynamic nature of the fish market and the specificity of prices and species for each region.

8.5 Storage points should be established by MATSYAFED and initially manned by MATSYAFED personnel. However, it is essential that these cold stores are eventually handed over to the Primary Co-operative Societies and be managed independently by them. Hence, a strong extension effort is necessary to strengthen the Primary Co-operative Societies and improve their functioning to enable them to take over management of storage points.

8.6 It has been observed in the present system that one of the major problems faced by fishermen is their indebtedness to various sources. While agencies like MATSYAFED and other lending institutions like banks, finance fishermen for capital investment and in a few cases for working capital needs, the consumption requirements of fishermen for deaths, marriages and illnesses are provided only by private financing sources. Hence it is necessary for MATSYAFED to restructure the present system of loan repayment and tailor it to the fishermen's requirements to a possible extent . This can be done through methods such as introducing a flexible repayment schedule with a provision for lower repayment during the lean seasons and a higher repayment in flush months and so on. It is also necessary to provide credit to fishermen for consumption purposes to

enable them to get out of the clutches of the auctioneers. This can be done by instituting a revolving fund for meeting consumption requirements and placing it at the disposal of the fishing group.

8.7 At present the subsidy component of the project is related with the input distribution. Hence the fishermen fail to realise the cost of capital disbursed under the project.It is observed that the low market share of MATSYAFED was mainly due to poor participation of its members. Hence it is suggested a subsidy should be related with output and fishermen who participate regularly in the auction conducted by the Society should be given the priority in replacing their wornout input. Besides, cash incentives can also be given them to continue their association with Society.

8.8 To protect the interests of fishermen, consumers and to restrain the negative trade influences, the scholar suggestd a system of regulated marketing in Kerala. The major elements of marketing controls are:

a) Price monitoring,
b) Linking primary and wholesale markets,
c) Regulation of inter-state flows of fish and
d) Regulating of marketing intermediaries.

Comprehensive measures including legal interventions, control over primary and wholesale markets with specific roles for Primary and Apex Co-operatives will ensure a sound and fair market mechanism in Kerala. It is assumed that MATSYAFED would play an important role in the regulated marketing scenario. The species composition of landings, nature of the commodity, scattered and small quanties of landings, and consumer preferences and market conditions called for a decentralised and highly cost effective market mechanism in Kerala. Hence, the scholar suggested a marketing strategy for MATSYAFED (Exhibit 8.1). The strategy clearly pointed out channels of distribution for fresh,frozen and value-added fish products as under:

(a) Fishermen- Fisheries Co-operatives- Wholesalers- seafood processors- coldstorages - consumers : Channel suggesed for the value-added frozen fish products in Kerala.

(b) Fishermen- Fisheries Co-operatives- Primary markets- Wholesale markets- Consuming Centres :Channel suggested for fresh fish.

EXHIBIT:8.2

PROPOSED SHORT TERM PLAN OF MATSYAFED

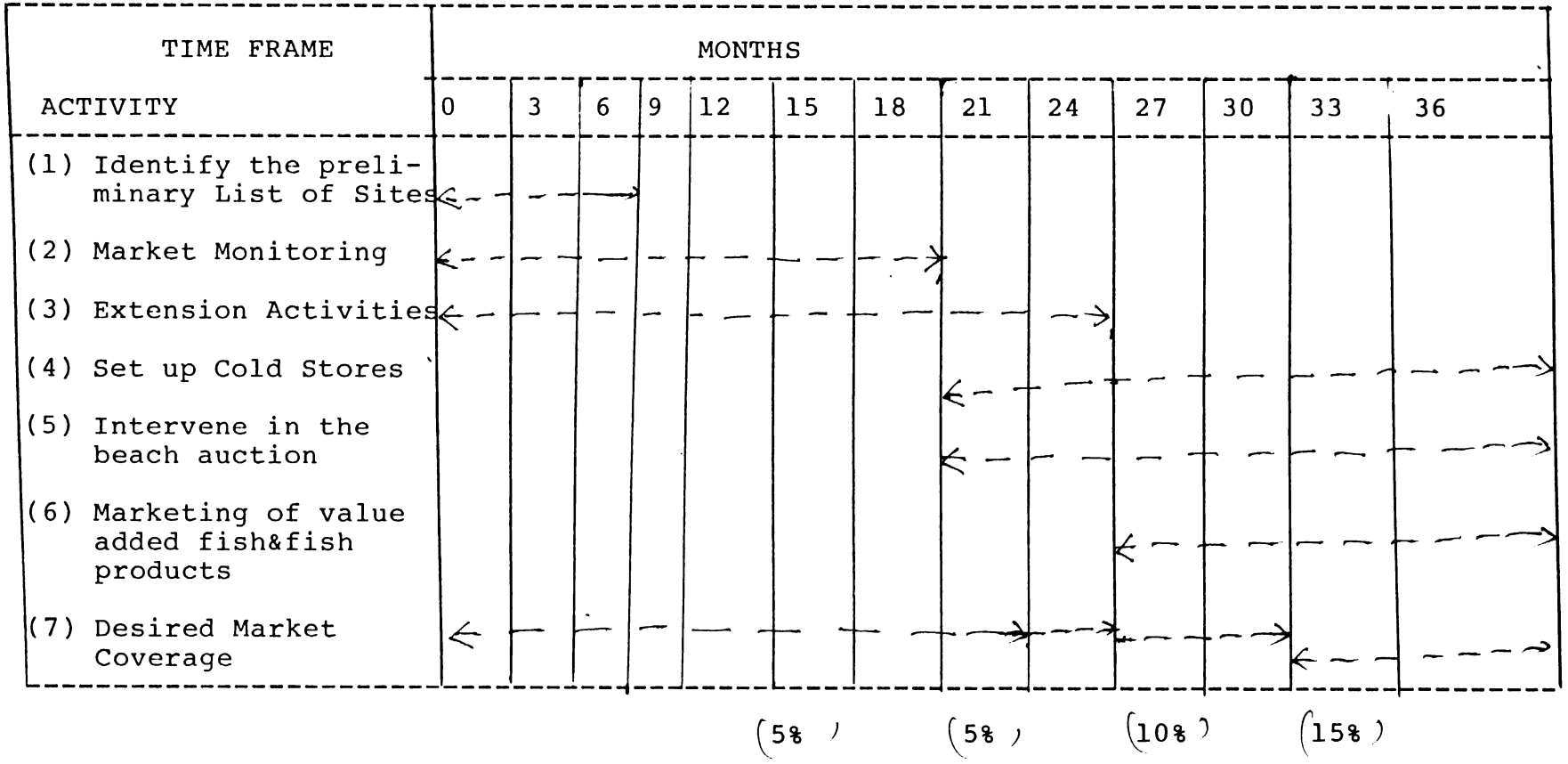
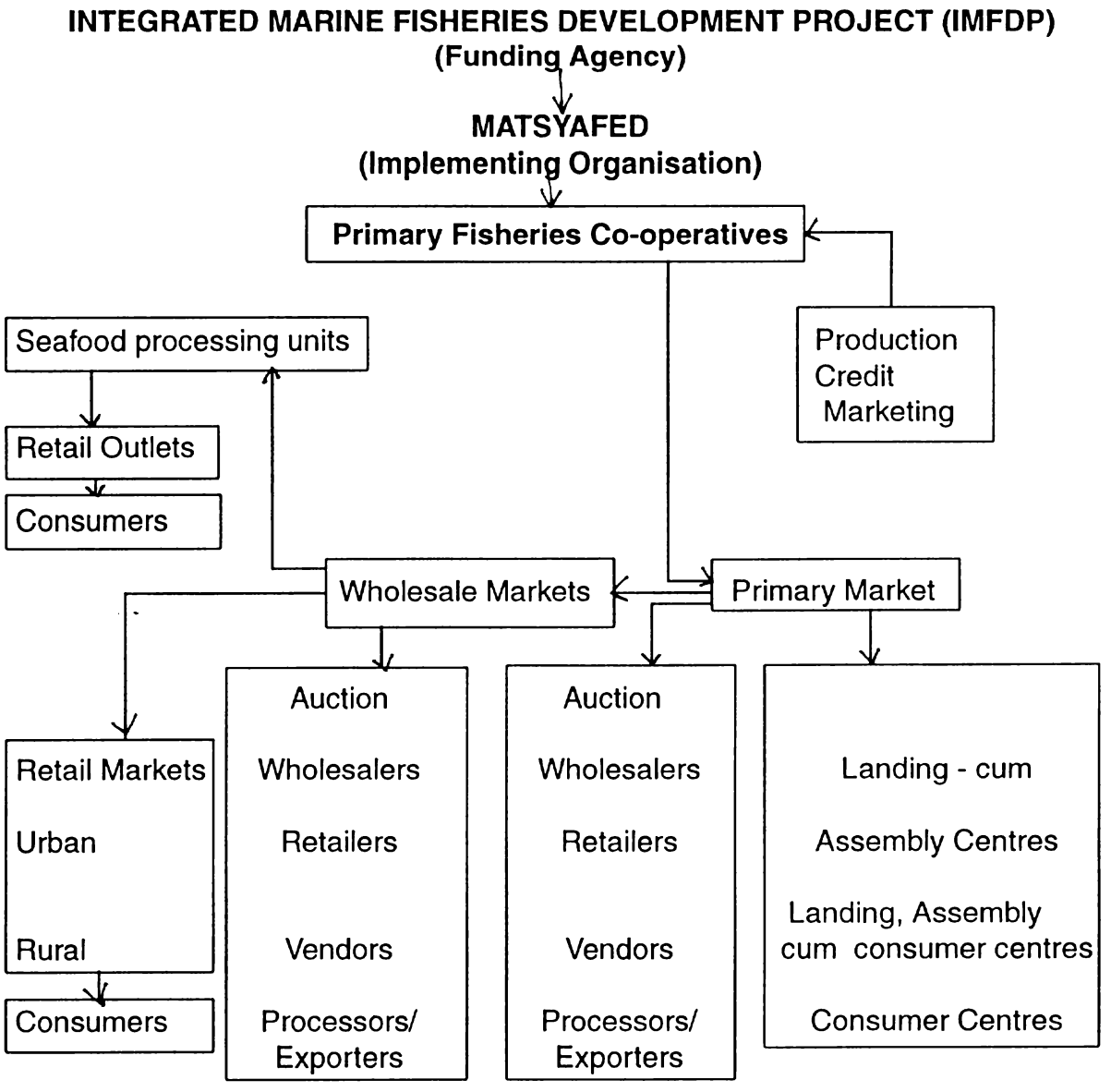


EXHIBIT 8.1

PROPOSED MARKET INTERVENSION STRATEGY FOR MATSYAFED



ACTIVITIES PROPOSED IN THE SHORT TERM

8.9 The activities that should be undertaken in the short term i.e. in the period of one to three years, are as follows: (Exhibit:8.2)

Selection of locations for market intervention

8.9.1 Some of the criteria suggested for selection of landing centres where market intervention should be undertaken are:

(a) Volume and species composition of catch landed:

The volume should be large enough to ensure that setting up a cold store would be a viable proposition. The species landed may also support the viability of the cold storage since exportable varities of fish fetch high price. The computations of the turnover required to make cold stores viable for capacities of 5 tonnes, 10 tonnes and 25 tonnes are give in Exhibit 8.3

Exhibit 8.3

COMPUTATIONS FOR COLD STORE OPERATION

CAPACITY	25 Tonnes	10 Tonnes	5 Tonnes
(1) Initial Investment (Rs. lakh)	20	8	5
(2) Operational Expenses (Rs.p.m.)			
Raw material	800,000	400,000	2,80000
Interest	40,000	15,000	8,000
Power	1,00,000	50,000	30,000
Staff	10,000	10,000	10,000
Miscellaneous Expenses	50,000	30,000	20,000
(3) TURNOVER REQUIRED TO BREAK EVEN	10,00000	5,00000	3,50000

It was assumed that the average selling price would be Rs. 25/- per Kg. and the procurement price would be Rs.20/- per Kg.

Hence, kg required p.m. to break even (assuming 5% margins)	40,000	20,000	14,000

If we assume that each fisherman will bring 40 Kg. per month.

No. of fishermen required to participate	1,000 #	500 #	350 #

(b) MATSYAFED's presence in the location:

A high degree of participation from local fishermen become necessary to reach the required turnover at which the cold store would be viable.

(c) Proximity to markets and consumption centres:

This would be an important factor while considering the demand at the storage point for fish

(d) Availability of existing infrastructure: and power supply

Some landing centres have ice plants and cold stores belonging to the Department of Fisheries. If these can be made operational at reasonable costs, it will save on additional capital investment. Availability of power is also considered as one of the important factors for selecting a centre.

(e) Level of indebtedness of fishermen in the area:

If the level of indebtedness is very high, the cold store may not be viable as middlemen will hold the rights to the catch.

Market Monitoring

8.9.2 Once the locations for intervention are selected, continuous monitoring is required at each of the centres for a period of 12 to 18 months. The areas which should be focused on are:-

* Volume of catch.
* Major Species and Product mix.
* Prices prevailing at the beach level, wholesale level and retail level.
* Profile of buyers at each of these levels.

Extension activities

8.9.3 A massive extension effort is required for the successful implementation of the market intervention programme. This will involve apprising fishermen of MATSYAFED's schemes and the benefits that accrue from becoming a member of Fisheries Co-operative Societies. It is suggested that cold storage should offer a procure-

ment price of Rs.20 per kg. which is 110% more than the current price. In order to make these cold storage viable at least 350 fishermen should bring catches to these societies to the extend of 40 kg. per month each. However an active involvement of 1000 fishermen would ensure the viability of 25 tonnes cold storages and landing centres. (Exhibit 8.3)

8.9.4 Another area where extension is required is education of fishermen on basic quality control measures that should be adopted by them. It is recommended that cold stores set up should follow stringent regulations on quality of fish procured by them. It is essential that the cold stores are perceived as locations where high quality fish is available at reasonable prices.

Development of infrastructure

8.9.5 Once the market monitoring and extension programmes are stabilised, a review of the selected locations should be undertaken with a view to finalising the list of market intervention points and the storage capacity to be set up at each point.

Operational guidelines

8.9.6 Operational guidelines should detail out the procedure to be followed for procurement, storage,auctioning, species to be procured, and so on. Guidelines on procurement prices for various species for different seasons should also be issued. The pricing guidelines should also specify a range of selling prices expected for various species in different seasons in Kerala.

ACTIVITIES PROPOSED IN THE LONG TERM

8.10 Long term, here, refers to a period of three to ten years. During this period, MATSYAFED should consolidate its market intervention programme by expanding to more landing centres. (Exhibit:8.2)

Direct Marketing

8.10.1 MATSYAFED can begin directly marketing fish , procure and auction to wholesale and retail markets near the storage point. Refrigerated or insulated trucks can be used for transporting fish to the selling point. Direct tie-ups are also possible with exporters, processors, institutional buyers and cold stores. However, this will be successful only if a minimum viable supply quantities are assured.

Extension Programmes

8.10.2 Sustained extension efforts are required throughout the market intervention exercise. These are to aim at

* Increasing coverage by MATSYAFED among fishermen in the State

* Education of fishermen

* Imparting quality control skills to the fishermen.

8.10.3 In the long term , the Board of Directors should decide on all policy issues relating to the Co-operative Societies .At the end of the ten year period, MATSYAFED should be able to transfer the assets and management of cold storage points to the Primary Co-operative Societies.

Processing

8.1Ø.4 In the long run it is recommended that MATSYAFED may diversify into fish processing. The fish products should be marketed through existing retail outlets and cold storages as well as through MATSYAFED's cold store.

8.1Ø.5 Studies conducted among household consumers of fish and fishery products revealed that there is a good demand for branded processed fishery products. By making use of this as an opportunity, MATSYAFED should undertake manufacturing and marketing of fish and fish products like fish cutlets, fish steaks, rings (Squid and cuttle fish) and tubes (squid), peeled and deveined (shrimp) and so on. Hence, it is recommended to start the marketing of value-added fish and fish products by the Apex Co-operative Federation without any delay.

8.1Ø.6 It is suggested that the Apex Co-operative Federation should take steps to set up a unit for the manufacture of value-added fishery products forconverting low priced fish landed by artisanal marine fishermen into value-added products,

8.10.7 After considering the species composition of marine fish landings from the traditional sector and the consumer preferences,the scholar suggested the following products:

- fish kheema
- fish cutlets & similar kheema based products and fish wafers
- dried fish products
- pickles (shrimp and fish)
- canned items like sardines (natural pack, in oil etc.) canned fish curry and shrimp curry and so on.

It is suggested to conduct a proper cost-benefit analysis before finalising the product line.

Promotion

8.10.8 As Kerala has a good market for fresh fish, the need for advertising and promotion has only been felt for value-added fish products. Promotional activities highlighting nutritional aspects, taste and so on of fish will become necessary for changing the consumers perception that frozen fish is not fresh.

8.1Ø.9 It is assumed that after the successful implementation of the project, the channels of distribution for both fresh and frozen fish in Kerala would be as depicted in the exhibit.8.1 MATSYAFED will hold the control of both primary and wholesale markets by licensing intermediaries, regulating interstate flows of fish, storing fish at coldstorages. It is envisaged that consumers market will be linked with production centres throughout the State. Hence a set of new products will be available to the consumers at reasonable prices.

CHAPTER-IX

CONCLUSION

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9.1 It is realised from the findings of the study that the most important needs of artisanal fishermen are credit facilities and marketing support. Without marketing linkages effective credit management is not possible. Marketing activities and credit management are interdependent.

9.2 The marketing practice in the State, evolved over a long period of time, has taken deep roots in both primary and wholesale marketing of fish. They have the inherent disadvantage of post-harvest losses on various counts and many malpractises resulting in low returns to producers and availability of only low quality protein food to a large number of consumers. In the absence of facilities of storage and effective means to intervene in the wholesale markets there is no way to ensure fair returns to fishermen. The scholar suggests a set of interventions at various levels of primary and wholesale markets for better management of surplus landings. Condition of storage and handling is inadequate and not within the control of the organisations of fishermen. Now the Goverment of Kerala

has modernised major wholesale and retail fish markets in the State. The scholar suggest to bring these centres under the overall control of Fisheries Co-operatives.

9.3 Direct marketing largely dependents on assured supply of fish and will only be possible with:

a) Infrastructural support of a high order.

b) Exploitation of deep sea fishery resources.

c) Intensive methods of production like aquafarming. Adopting a long term perspective is necessary to create the infrastructure required for marketing fish and fish products in Kerala. Hence the scholar suggested a set of activities to be undertaken within a span of 1 to 10 years. It is assumed that Fisheries Co-operatives would play an important role in the days to come . Accordingly the scholar devised a performance appraisal system for monitoring various activities undertaken by Primary Co-operatives under the emerging scenario in Kerala.

9.4 With the enhanced coverage in primary sales, provision of essential infrastructure and working capital for the Primary Co-operatives, the scholar assumes that they would be equipped to play a decisive role in the management of surplus landings.

9.5 Even though beneficiaries of the project earned Rs.4207.90 p. a more than the non-beneficiaries, the then coverage of MATSYAFED on the primary sale of fish was only 5% of the total sale in Kerala during 94-95. Most of the beneficiaries resorted to borrowing from private financiers. In short, the extent of beneficiaries' control over the catches was minimal due to involvement of middlemen in financing inputs and extending credit to meet their short time requirements. The scholar recommended a set of activites for enhancing the coverage of the project through MATSYAFED and had suggested a plan of action for progressively reducing the role of middlemen in the marketing arena.

9.6 The Project, (Integrated Marine Fisheries Development Project (IMFDP), is able to provide valuable information on the nature of artisanal marine fishermen and their varied needs and interests in Kerala. The scholar suggested future studies in the following areas;

1. The reason for change in the species composition of marine fish landings in Kerala.
2. The resource mapping of fisheries along the coastal waters for artisanal marine fishermen in Kerala.
3. The suitability of different types of craft, gear and OutBoard Motors combinations in the coastal waters of Kerala.

4. An appeal to be used effectively for the extension campaign launched among the fishermen for the project.
5. A detailed marketing survey for value added fish and fish products in Kerala .

9.7 The present gap in the demand and the supply of fish in Kerala has to be narrowed down by adopting appropriate measures including legal intervenion. It is hoped that findings and recommendation of the study will provide adequate insight into the real issues of artisanal fishermen in Kerala.

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ANNEXURE : 1

DATA SHEET FOR EARNINGS OF FISHING GROUPS IN KERALA

Date .....

1. Name of the fishing village:
2. Name of the group leader:
3. Ownership size;
4. Average fishing group size;
5. Details of fishing craft/gear/OutBoard Motors;

6. Total fishing days per annum.
7. Average no.of days with no catch;
8. Average Net maintenance expenses per annum.;
9. Average OutBoard Motors maintenance per annum.;
10. Average Boat maintenance expenses per annum;

11. Details of Operational expenses:
    a) Fuel.
    b) Tea.

12. Particulars of catch landed:

	January-May	June-August	September-December
Quantity:			
Value:			
Major species:			

13. Mode of auctioning;

14. Details of assistance received under the project :
(Applicable only to beneficiaries).

15. Interest charges for the loan availed;

16. Average Gross Group Earnings;

17. Average Net Per Capita Income;

(a) Employee-Owner

(b) Employee

ANNEXURE : 2

INTERVIEW SCHEDULE FOR FISHERMAN

Date .....

1. Name of the fishing village
2. Name of the group leader
3. Have you borrowed money from any sources? (Yes/No)
4. If yes, please state
   a) Sources of borrowing
   b) Purpose of borrowing
   c) Interest rate
   d) terms of repayment
5. Are you a project beneficiary of MATSYAFED? Yes/No.
6. If yes, what advantage do you perceive from the project?
7. Are you a member of MATSYAFED Co-operative Society?

   Yes/No.
8. If Yes, are you satisfied with the performance of the Co-operative Society? (Please allote your ponts as per the following ranking?

Ranking	Point
Highly dissatisfied	1
Dissatisfied	2
Indifferent	3
Satisfied	4
Highly satisfied	5

RANKING SCORE .....

9. What is your expectation about Primary Co-operative Society?

10. According to you what are the major hindrances in the operation of Co-operative Society?

11. What are your suggestions for improving the performance of Co-operative Society?

12. What is your opinion about the type of assistance disbursed under Integrated Marine Fisheries Development Project in Kerala?

13. Do you think that whether the Project helped to build Co-operative structure in the State? Yes/No

14. If yes, please state the reason for the same?

ANNEXURE: 3

INTERVIEW SCHEDULE FOR CHANNELS OF DISTRIBUTION OF FISH

Date .....

1. Name of the landing centre;
2. Name of the respondent;
3. Type of Marketing intermediary;

   (Auctioneer/ Wholesaler/ Retailer/ Vendor)
4. Sources of procurement;

5. Details of procurement (on a monthly basis)

Period	Quantity	Value
Lean		
Flush		
Average		

6. Major species handled;
7. Details of credit availed;
8. Profile of major customers;

9. Details of credit extended to them;

ANNEXURE: 4

INTERVIEW SCHEDULE FOR HOUSEHOLD CONSUMERS OF FISH AND FISHERY PRODUCTS

Location (Place & District) .....

Date.....

1. Do you consume fish ? Yes \ No

2. If yes, how frequently do you bring fish?

   a) Daily b) 2-3 times in a week
   c) Once in a week d) 2-3 times in a month
   e) Once in a month f) Only on special occasion

3. Which species\ varieties of fish do you prefer to bring home by the supplier\ to obtain from the market?

4. What is the average price/kg of fish in a typical month?

5. What is your normal quantity of purchase in a typical month?

6. Where do you bring fish from?

7. If the price of fish goes up, on what percentage will you continue buying?

Price increase	Decrease in the consumption of fish
Upto 10%	
11 to 50%	
51 to 100%	

8. If the price of fish comes down, by how much will your consumption increase?

Price decrease	Increase in the consumption of fish
Upto 10%	
11 to 50%	
51 to 100%	

9. Of your total consumption of fish, What percentage is

(a) Fresh fish
(b) Dried fish

10. Do you consume frozen Fish & Fishery products Yes/No

11. If yes, what is your opinion on the quality of frozen fish presently available to you?

12. What will be your preferences for various attributes of Frozen fish and fishery products? (Please allot your points as per the following ranking]

Ranking	Points
Not at allimportant	1
Not very important	2
Neutral	3
Important	4
Very important	5

Attribute	Score
(a) Hygiene	.....
(b) Availability	.....
(c) Convenient to carry	.....
(d) Covenient to cook/eat	.....
(e) Freshness	.....
(f) Storage life	.....

13. Do you think any other factor, which is essential for fish & fishery products? Yes \ No

If Yes, please specify the factor

14. Which is your preferred style of product?

(a)	Dressed	(b)	Fillet
(c)	Steak	(d)	Ring
(e)	Tube	(f)	Peeled & Undeveined
(g)	Peeled & Deveined	(h)	None of these

15. What is the your preferred form of product?

(a) Loose by weight
(b) Loose by Rs.value
(c) Packaged unbranded
(d) Packaged branded

16. What would be your reaction if these fishery products were available to you at uniform prices and consistently good quality under a Government agency (MATSYAFED).....

17. PERSONAL PROFILE:

A. Name .....

B. Educational qualification .....

C. Occupation .....

D. Age .....

E. Monthly income .....

F. Family size .....

G. Address .....

ANNEXURE: 5

DISTRICT-WISE PERCENTAGE DISTRIBUTION OF ACTIVE MARINE FISHERMEN IN KERALA DURING 1994-95 (ESTIMATED)

Sl. No.	Name of District	Population (1994-95) (Estimated)	No.of Active fishermen (1994-95) (Estimated)	Percentage of Active fishermen
1.	Thiruvananthapuram	161830	32452	20.05
2.	Kollam	91092	19651	21.57
3.	Alappuzha	108108	25257	23.36
4.	Ernakulam	70369	15796	22.44
5.	Thrissur	67698	13580	20.06
6.	Malappuram	77646	17294	22.27
7.	Kozhikode	95838	21491	22.42
8.	Kannur	54124	13392	24.74
9.	Kasargode	42458	10282	24.22
	Total	769163	169195	22.00

Source:

Directorate of Fisheries: Marine Fisheries Of Kerala at a Glance 1995

ANNEXURE:6

COVERAGE OF PRIMARY LEVEL MARINE FISHERMEN'S DEVELOPMENTAND WELFARE CO-OPERATIVE SOCIETIES

Sl. No.	Name of Society	No.of members	No.of Active fishermen	% of coverage
	THIRUVANTHAPURAM DISTRICT			
1.	Kollamkode-Paruthiyoor	644	1807	35.60
2.	Poovar-Carumkulam	908	1387	65.50
3.	Kochuthura-Pallom	868	2005	43.30
4.	Pulluvila	840	1546	54.30
5.	Adimalathura	1157	1365	84.80
6.	Vizhinjam North	319	1599	19.90
7.	Vizhinjam South	745	2051	36.30
8.	Kovalam-Panathura	352	725	48.60
9.	Poonthura	1417	2100	67.50
10.	Beemapally-Cheriyathura	388	1268	30.60
11.	Valiyathura	544	1007	54.00
12.	Kochuthoppu-Shanghumugham	479	1219	39.30
13.	Kannamthura-Valiyaveli	650	1911	34.00
14.	Mariyanadu-Perumathura	760	1991	38.20
15.	Vettoor-Edava	560	2763	20.30
16.	Pallithura-Vettiyathura	838	1406	59.60
17.	Mampally-Nedunkanda	423	1802	23.50
18.	Thazhampally-Anjuthengu	629	1829	34.40

Sl. No.	Name of Society	No.of members	No.of Active fishermen	% of cover
	KOLLAM DISTRICT			
19.	Vellanathuruthu	1101	1169	94.20
20.	Kannimel-Sakthikulangara	477	1377	34.60
21.	Karithura-Ponmana	643	1360	47.30
22.	Maruthoorkulangara Kulasekharapuram	823	1508	54.60
23.	Paravoor	156	1023	15.20
24.	Sraikkadu Azheekal	1370	1786	76.70
25.	Mayyanad-Eravipuram	474	1808	26.20
26.	Alappattu-Parayakkadavu	619	1092	56.70
27.	Pallithottam-Mudakkara	542	2259	24.00
28.	Neendakara-Puthenthura	854	1409	60.60
29.	Wadi-Thankasseri	631	1325	47.60
30.	Cheriazheekal	758	1450	52.30

Sl. No.	Name of Society	No.of members	No.of Active fishermen	% of coverage
	ALAPPUZHA DISTRICT			
31.	Pollathai-Chethi	1102	2139	51.50
32.	Chettikad-Kattoor	1164	2250	51.70
33.	Arthunkal-Ottamassery	1994	3091	64.50
34.	Azheekal-Pallithode	1114	2292	48.60
35.	Vadakkal-Kanjiramchira	1220	2583	47.20
36.	Thumboli	783	990	79.10
37.	Ambalapuzha-Punnappra	2724	3200	85.10
38.	Thottappally-Purakkadu	985	1977	49.80
39.	Pathiyankara-Pallana	1115	1517	73.50
40.	Valiyazheekal-Arattupuzha	1053	2974	35.40
	ERNAKULAM DISTRICT			
41.	Cherai-Munambam	832	2363	35.20
42.	Manassery-Fort Cochin	736	1632	45.10
43.	Azheekkal-Elamkunnapuzha	617	2659	23.20
44.	Chellanam-Kandakkadavu	1056	2049	51.50
45.	Kannamali-Cheriakadavu	582	1168	49.80
46.	Njarakkal-Nayarambalam	1233	2563	48.10
47.	Cochin Corporation area	521	1905	27.30
48.	Edavanakkadu-Ayyampally	693	1593	43.50

Sl. No.	Name of Society	No.of members	No.of Active fishermen	% of coverag
	THRISSUR			
49.	Pandinjara Vemballoor-Perinjanam	796	1057	75.30
50.	Nattika-Engandiyoor	1174	2398	49.00
51.	Azhikode-Edavilangu	1522	2269	67.00
52.	Kaipamangalam-Chappillipuram	1235	1907	64.80
53.	Edakkazhiyoor-Mannalamkunnu	640	1862	34.40
54.	Kadappuram-Manathala	850	2717	31.30
	MALAPPURAM DISTRICT			
55.	Palapetty-Veliyamkode	653	1982	32.90
56.	Puthuponnani-Thekkekadappuram	499	1495	33.40
57.	Mukkadi-Marakkadavu	515	1551	33.20
58.	Meentheruvu-Azheekal	294	1404	20.90
59.	Pallivalappu-Padinjarekkara	502	1198	41.90
60.	Koottai-Paravanna	694	1941	35.75
61.	Thevara-Kadappuram-Cheeran kadappuram	1185	1781	66.50
62.	Ossan-Kadappuram-Elaran Kadappuram	525	2261	23.20
63.	Parappanangadi-Kadalundi Beach	1341	2785	48.20

Sl. No.	Name of Society	No.of members	No.of Active fishermen	% of coverage
	THRISSUR DISTRICT			
49.	Pandinjara Vemballoor-Perinjanam	796	1057	75.30
50.	Nattika-Engandiyoor	1174	2398	49.00
51.	Azhikode-Edavilangu	1522	2269	67.00
52.	Kaipamangalam-Chappillipuram	1235	1907	64.80
53.	Edakkazhiyoor-Mannalamkunnu	640	1862	34.40
54.	Kadappuram-Manathala	850	2717	31.30
	MALAPPURAM DISTRICT			
55.	Palapetty-Veliyamkode	653	1982	32.90
56.	Puthuponnani-Thekkekadappuram	499	1495	33.40
57.	Mukkadi-Marakkadavu	515	1551	33.20
58.	Meentheruvu-Azheekal	294	1404	20.90
59.	Pallivalappu-Padinjarekkara	502	1198	41.90
60.	Koottai-Paravanna	694	1941	35.75
61.	Thevara-Kadappuram-Cheeran kadappuram	1185	1781	66.50
62.	Ossan-Kadappuram-Elaran Kadappuram	525	2261	23.20
63.	Parappanangadi-Kadalundi Beach	1341	2785	48.20

Sl. No.	Name of Society	No.of members	No.of Active fishermen	% of coverag
KOZHIKODE DISTRICT				
64.	Chaliyam-Beypur	898	1632	55.00
65.	Marad-Thekkekadappuram	629	1062	59.20
66.	Vellayil-Kampuram	1374	2911	47.20
67.	Puthiyangadi-Elathoor	770	3063	25.10
68.	Kannamkadavu-Ezhukudikkal	671	1182	56.80
69.	Valiyamangadu-Koilandy	901	1588	56.70
70.	Kollam-Moodadi-Iringal	966	3467	27.90
71.	Vadakara-Muttungal	1203	2581	46.60
72.	Madappally-Azhiyoor	847	1939	43.70
KANNUR DISTRICT				
73.	Kurichiyil-Pallissery	736	3558	20.70
74.	Edakkad-Kannur City	376	2818	13.30
75.	Azhikode-Puthiyangadi Kadappuram	557	4577	12.20
76.	Palakkodu-Kuwai	245	1390	17.60
KASARGODE DISTRICT				
77.	Thrikaripur-Padanna Kadappuram	1450	1705	85.00
78.	Thaikadappuram-Poonchavi Kadappuram	699	2050	34.10
79.	Hosdurg-Pallikkara	858	1475	58.20
80.	Kattikulam-Kasaba	554	2417	22.90
81.	Kavangoli-Bangara-Manjeshwar	578	2232	25.90

Annexure:7

MARKETING STRATGY OF MATSYAFED

OBJECTIVES

1. To ensure maximum returns to the fishermen
2. To achieve progressive elimination of middlemen.
3. To popularise value added fish and fish products.

In order to achieve the above objectives the MATSYAFED has laid down the following activities;

COMPONENTS	NATURE OF ACTIVITIES
(i) PRIMARY MARKETING	* Control over first sales by Co-operatives. * Organization of beach level auctions for member fishermen. * Pooling, sorting and Management of surplus by storage/drying etc through Primary Co-operatives. * Regulatory Interventions, Legal or others. * Implementation of Regulated marketing
(ii) MARKETING CONTROLS	- Organization of major landing centres, wholesale markets and establishing linkages with Primary and Wholesale Markets. - Regulation of Inter-state movements. - Price monitoring - Marketing of fresh/frozen fish - Marketing of value-added products

(iii)	DIRECT MARKETING	* Marketing of products/ surplus produce from primary Co-operatives to be taken up mostly by the Federation.
		* Provision of inputs, off season advances and kerosene through Primary Co-operatives.
(iv)	MARKETING SUPPORT	- Provision of credit and infra-structure facilities to Primary Co-operatives for storage and surplus management.
		- Operation of Vanitha Buses
		- Formation of Marketing Groups
		- Supply of quality fishery requi-sites at competitive prices.

SOURCE: MATSYAFED, THIRUVANANTHAPURAM