MODERNIZATION OF FISH ECONOMY AND ITS IMPACT ON THE WELL-BEING OF FISHERMEN - A case study

DISSERTATION SUBMITTED TO THE JAWAHARLAL NEHRU UNIVERSITY
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR
THE AWARD OF THE DEGREE OF

MASTER OF PHILOSOPHY

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1986

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18th July, 1986

CERTIFICATE

Certified that the dissertation entitled: "Modernization of Fish Economy and its Impact on the Well-Being of Fishermen-A Case Study", submitted by S. Peppin is in partial fulfilment of six credits for the degree of Master of Philosophy of this University. This dissertation has not been submitted for any other degree of this University or any other University and is his own work.

We recommend that this dissertation be placed before the examiners for evaluation.

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ACKNOWLEDGEMENTS

I wish to express my sincere and deep gratitude to my supervising teacher Dr. K. Rajasekharan Nayar, Assistant Professor, Centre of Social Medicine and Community Health. His impeccable and constant guidance, timely interventions at various stages and fruitful discussions enabled me to undertake the work and to give shape to this dissertation.

I am thankful to Dr.(Mrs.) Imrana Qadeer, Chairman, and other faculty members of the Centre for their valuable comments on an earlier draft of this dissertation. I also wish to express my thanks to them for their academic support.

I am greatly indebted to Mr. John Kurien, Assistant Professor, Centre for Development Studies, Trivandrum, who suggested some relevant literature on this topic and offered his valuable comments and suggestions. I am also thankful to Rev. Fr. Jesudas, Director, Kotter Social Service Society, and Rev. Fr. Dionysius, the Parish Priest, Kanyakumari, for their encouragement and moral support. I express my gratitude to Mr. A. George and Mr. Siluvai Pillai for their assistance and help in meeting the village leaders and the merchants.

At the personal level, I wish to place on record the cooperation given by the fisherfolk of Kumari Muttom while conducting this study. Mr. Lilly and Mr. Rakesh Kumar deserve my special thanks for typing the earlier drafts. Finally, I express my heart felt thanks to Mr. John Bhatia for his cartographical assistance and the excellent typography.

S. Peppin

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I N T R O D U C T I O N

CHAPTER-I

I N T R O D U C T I O N

A paradoxical situation exists in Indian Fisheries. The more the introduction of modernization strategies to develop the fishermen especially the artisanal fishermen, the more impoverished they become. The advent of modernization of fish economy has resulted in protein pilferage by multinationals in the developed countries who control the entire fish production in collaboration with the merchant capitalist class in India.

The development of fishermen depends on their productive capacity which decides the quantity and the quality of fish production in which the availability of sea resources also play a vital role. The modernization of fish economy has led to a bewildering decline of resource base in the sea and the emergence of a merchant capitalist class in fisheries sector. The introduction of new technology in fishing which is alien to the Indian fishermen has become means of controlling fish production. The multinationals control the merchant capitalist in India in the name of new technological and monetary aids, who in turn control the fishmen in the name of credit at the cost of their well-being. As a result, the fishermen get only the pittances for their hard labour and the merchants and the middlemen extract majority of the value produced through exploitative credit system and manipulative and profit-oriented marketing system.

The prime object of modernising the fisheries sector is to increase fish production by exploring and exploiting the unexplored and unexploited areas so that the living standards of fishermen can be accelerated towards attaining the pinnacle of well-being. But in reality, the modernization process of fish economy has led to the exploitation of fishermen while attempting to exploit the sea resources. In India, development of fisheries sector has resulted in the investment of power and wealth in the merchant capitalist class and the exploitation of fishermen's due share of the fish production. Thus fishermen development is meant as the development and the prosperity of a few i.e. the merchants, the middlemen, and a fraction of modern fishermen, and the miseries and the poverty of the majority i.e. the artisanal fishermen.

In a country, if a community loses its material base and economic viability, it is proved to be the victims of mass-illiteracy, unredeemable ill-health and unmet basic needs such as food, shelter and clothing. If we believe that these are the indicators of community well-being, then the well-being of fishermen is in a state of utter deterioration and decomposition. Such an existing state of affairs is the result of modernization of fish economy which has deprived the fishermen of their resource capacity to avail the facilities provided by the Government and other non-governmental organizations. They are not able to relieve themselves from the oppressive clutches of merchants

and middlemen. Their community life is totally so disorganized that they are unable to obtain unity and soliderity to fight against such dehumanizing forces that hamper their growth and development.

There are two types of forces that limit the prosperity of fishermen. They are (i) the forces within their community and (ii) the forces outside their community. The first type of forces are those which are exerted by the merchants and the middlemen in a fishermen community, who control the mode of production by various means such as credit and marketing. The second types are those created by the multinationals with whose collaboration the local merchant capitalist establish marketing contracts with the developing countries. The collaboration and the consequent marketing contracts have made the merchant capitalists abide blindly by the detrimental terms and conditions proposed by the multinationals.

The present social situation which impoverishes the economic status of fishermen community is ultimately the strategy of the multinationals who have the Indian fish merchant capitalist class in their sway. The Indian merchants in the same way enforced the same strategy on the poor fishermen for their financial gains and the entire production therefore becomes their monopoly. Consequently, the fishermen have no way of enjoying

their fruits of production born out of tireless labour. The fish production for the fishermen community has become the fruits of multinationals and the merchant class in India. The exhortion of valuable fish protein has not only deprived the fish consumption by the fishermen but also the entire Indian fish consuming community as a whole. Thus the modernisation of fish economy has resulted in a severe type of economic and social deprivation affecting their well-being.

Therefore it is imperative and it makes all the more challenging to unravel the crux of the problem and identify the root causes of the economic backwardness and the deterioration of the well-being of fishermen. This study is conducted to understand these situations while analysing the relationship between Production relations and well-being of fishermen.

In our attempt to study the modernisation of fish economy and its impact on the well being of fishermen, followed the comprehensive approach while laying emphasis on the socio-economic and political factors, the cultural patterns, the technology of fishing and the fishermen's knowledge about the resource base and the availability of sea resources. We spent

about 4 months Oct.,85 to Jan.,86 in actual contact with the study village, Kumari Muttom. The methology that has been followed in this study is stated in Chapter 3.

In chapter 2, we reviewed some of the literature on modernisation of fish economy. Section 1 under this chapter covers the nature of India's fisheries with special reference to Tamilnadu. The section II describes the personality of fishermen. In Sections III and IV, the type of ownership pattern, credit and marketing system are covered with a reference to the nature of production relations in fish economy. The section V deals with the developmental issues and section VI explores the use of modern technology and its impact on the fishermen.

In chapter 4 which is based on the surveyed data, the main components of production relations is fish economy are analysed. Section I of this chapter analyses the ownership pattern. Section II analyses the credit system and in Section III, the marketing system is explicated. The fishermen's knowledge of resource base and the technology used by them is analysed in Section IV.

In chapter 5, the indicators of well-being of fishermen are reported. The population characteristics, the educational

level, the existing facilities like housing, water supply, environmental sanitation, the health culture and health problems, the role of government and non-governmental organisations and the efforts taken by the fishermen in promoting their well-being are analysed in order to portray the existing nature of fishermen's well being in Kumari Mutton.

In Chapter 6, an attempt is made to explain the relationship between the modernisation of fish economy and its impact on the well-being of fishermen. In Chapter 7, the summery of the findings and conclusions of this study are reported.

CHAPTER - II

MODERNISATION OF FISH ECONOMY - A ROAD TO CAPITALISM

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INTRODUCTION

The development of a particular community in a country, especially of a developing country depends on the forces that operate within and outside the community. Almost all the developing countries follow the path of development of developed countries that are alien to them, but they have no other choice but to fall prey to the clutches of the developed countries as the latter exercise full control over the former in the name of aid and development. India even after independence, could not escape from the influence of developed nations which could easily invest their capital in the name of technological exchange and modernization. The Indian planners who were craddled in colonialism before independence, were given the taste of evolving policies, plans and strategies for development. Having cherished and nourished by the fruits of capitalism and colonialism, they did formulate "lofty" egalitarian pronouncements, while using essentially the same machinery bequeathed to them by former colonial rulers. This ensured that the fruits of independence benefited them most and perpetuated their hold on the government (Myrdal, 1972). This attitude did reflect in all the sectors of

national development namely health, education,industry, agriculture and fisheries. The new rulers continued to follow the colonial tradition, inspite of their promise to take active steps to make benefits, especially in the field of health, available to the masses, particularly to the weaker sections. (Banerji, 1977).

The improvement of any particular community in our country was determined by the path of development the ruling elite followed. Ultimately, India's abject dependency that continues till today, shapes the development of any community in India. It is under this background that the development of fishermen in India has to be understood and analysed. India's fisheries sector, inspite of its non-predominant nature, is fully exploited by the capitalist countries and as a result the living standard of fishermen in our country is deplorable and perishable. The approach to development of fisheries sector in the name of mechanization/modernization, has helped only the affluent class among fisherman, who are exploitative and appressive in nature. The developed countries exploit the developing countries and the developed community in a developing country i.e. the upper class, exploit the lower class. This phenomena has become universal and inevitable.

Under the blanket of modernization of fish economy, a new capitalist class structure is created, which perpetuates the oppression of fishermen. The real beneficiaries of the modernization of fish economy are the multinational fish companies, the big businessmen or the merchant capitalist owners of the insulated vans (Kurien, 1978) while the local fish merchants and middle men subserve the needs of the merchant capitalist class, continue to exploit the local fishermen to the fullest maximum.

In the forthcoming parts of this chapter, it is argued that the modernization of fish economy has led to the emergence of capitalism in fish economy and it is this emergence of capitalism that continue to uphold the miseries of fishermen, especially the artisanal fishermen in India. The health and well-being of the fishermen community has to be seen against this backdrop.

I. INDIA'S FISHERIES WITH SPECIAL REFERENCE TO TAMILNADU

India has a coast line of 6,536 km and the fishermen population according to 1981 census is about 5.58 million (Fisheries Statistics, 1983). The fishermen population represents 1% of the total population and the average size of the fisherman family is 5.5. About a million families are depending on fishing for their livelihood (Bapat and Kurien 1981). India's marine states and union territories are given in the Table - I.

TABLE-I

Marine States and Union Territories in India

West Coast	East Coast
Gujarat	West Bengal
Maharashtra	Orissa
Goa, Daman and Diu (U.T.P	Andhra Pradesh
Karnataka	Tamil Nadu
Kerala	Pondicherry (U.T.)
Lakshadweep Islands (U.T.)	Andaman and Nicobar Islands (U.T.)

It was in the year August 1976, India declared, through an act of parliament an Exclusive Economic Zone of 200 miles. The main objective of this declaration was to explore, exploit, manage and conserve the living and non - living resources of the seas. As a result of this declaration, the resources hitherto exploited by other nations have come exclusively in the domain of national limits of jurisdiction of coastal nations increasing opportunities for them for obtaining raw materials for food, better employment and for establishment of fishery based industries (George, 1977). Prior to the declaration of EEZ, the FAO of the UN started having direct interest in the development of fisheries of the Indian ocean with the formulation of the Indian Ocean Fishery Commission in 1967, under Article VI of the FAO Commission. The objectives of this commission are to promote, assist and coordinate national programme over the entire field of fishery development and conservation; to promote research and development activities in the area through international aid programmes and to examine management problems with particular reference because of the need to take urgent action to those relating to the management of off-shore resources (Silar, 1977). These objectives clearly indicate the interest of the developed nations over India. Among the countries bordering the Indian ocean, India is the largest. She contributes about 45% of the fish production

from the region. However, EEZ declaration has given way to the entry of big business interest to exploit our newly acquired deep-sea resources (Kurien 1979) as the fisheries of the country is in the traditional and the shift from the traditional to the modern ways of exploitation of sea resources has set in.

There are over 25,000 species of marine fishes which have been identified. It is interesting to note that over 90% of the marine life is concentrated in the 10% of the waters above the continental shelf which skits the earth's land mass generally from the coastline to a depth range of about 200 metres. The reason is that the photosynthesis process among the microscopic acquatic plants takes place in a greater degree with the easy penetration of the sunlight and these plants thrive best in cold waters. Hence the concentration of world's largest stocks of fish are found in temperate waters which has less number of species but available in teaming millions where else in the tropical waters there are numerous species but each available only in far smaller quantities. (Kurien and Sebastian, 1985). India, being a tropical country, there are large number of species but available in smaller quantities. Eventhough, the quality of fish plays some role in determining the income of fishermen, it is mainly the quantity that is more important

to fishermen, especially in the case of prawns, lobsters and cuffle-fish which are commonly available in tropical waters. But the question of fish catch in big quantity is a remote possibility as the depletion of resources is growing at a higher rate due to mechanization of fishing in India. Eventhough the countries of the temperate waters have plenty of sea resources, they venture out to exploit the resources in the tropical waters in order to appropriate more profits.

It is estimated that fishing provides direct employment to about 1.8 million fishermen. The statewise information on coastline, fishing village, active fishermen, indigenous crafts and fish landing centres are given in Table II. The statistics showing the total number of fishing crafts and years used by the modern and artisanal fishermen is not reliable due to inconsistencies. It is sad that no proper statistics is maihtained on the total number of mechanized fishing crafts in India, leaving alone the crafts used by the artisanal sector. However, the information on the statewise distribution of mechanised boats and non-mechanised fishing crafts and the statewise distribution of marine fishing gears taken from the CMFRI bulletin, 'Marine Fisheries Information Service' is given in the Table III, IV and V respectively.

TABLE-II

STATEWISE INFORMATION ON COASTLINE FISHING VILLAGES, ACTIVE FISHERMEN, INDIGENOUS CRAFTS AND FISHING LANDING CENTRES.

State	Coastline km	Fishing Villages	Active Fishermen	Indigenous Crafts	Fishing landing centres
Gujarat	1,500	179	22,518	4,197	48
Maharashtra	600	299	41,529	8,288	173
Goa	110	40	4,067	1,118	40
Karnataka	270	145	21,740	6,248	95
Kerala	600	268	80,898	21,718	223
T.N. and Pondicherry	960	395	72,105	32,268	395
A.P. and Orissa	970	408	64,592	25,976	280
West Bengal	1,080	179	15,026	6,667	51

Source: CMFRI Bulletin 30A, March, 1981.

TABLE-III

STATEWISE DISTRIBUTION OF MECHANISED BOATS (1980)

State	Trawlers	Gill Netters	Purse Seiners	Dol Netters	Others	Total
West Bengal	-	740	-	-	-	740
Orissa	350	119	-	-	-	469
Andhra Pradesh	580	-	-	-	-	580
Tamilnadu	2,614	142	-	-	-	2,757
Pondicherry	160	3	-	-	-	163
Kerala	2,630	362	37	-	9	3,038
Karnataka	1,553	28	325	-	98	2,004
Goa	494	274	66	-	74	908
Gujarat	1,209	1,547	-	650	7	3,413

Source: Marine Fisheries Information Service (August, 1981).

TABLE-IV

STATEWISE DISTRIBUTION OF MARINE FISHING GEARS (1980)

Item	W.B.	Orissa	A.P.	T.N.	Pondicherry & Kaiaikovil	Kerala	Karnataka	Due & Daman	Gujarat	Total
Trawl nets	-	-	823	6,219	437	1,454	1,788	772	2,692	14,165
Purse Seiner	-	-	-	-	-	7	188	41	-	238
Drift/gill nets.	2,467	10,427	42,305	11,8300	1,851	23,307	6,571	3,346	7,383	216,037
Boat Seiner	-	2,676	7,738	7,220	375	9,779	23	165	-	29,976
Tiles Bag nets	6,200	2,778	14,617	1,842	152	-	941	430	21,857	48,817
Hooks Lines	869	15,265	10,752	2,2111	720	2,941	1,507	127	2,736	56,676
Rampens	-	-	-	-	-	-	86	101	-	187
Dhore Seiner	426	2,893	3,042	4,549	84	2,926	3,924	987	-	18,841
Traps	61	515	130	8,919	9	2,239	-	-	86,752	98,825
Scoop nets	395	37	2,925	1,000	362	1,371	-	-	-	6,080
Others	2,433	5,201	37,199	6,339	120	2,761	10,925	2,813	28,813	95,804

N.B. No figures for the State of Maharashtra are available. Figure s refer to gear owned/shared by fishermen only.

Source: Marine Fisheries Information Service (August 1981).

TABLE-V

COMMON CRAFT-GEAR COMBINATIONS

S.No.	Boat type	Fishing Gear	Area of operation
1.	Satpati type boat	Drift nets, fixed nets, Bag nets, seiner, Dragnets.	Gujarat and Maharashtra
2.	Satpati type boat (Mechanised)	Trawl nets, long lines	
3.	Plant-build out rigger boat.	Shore Seiner, Boat Senier, Gillnets, Dragt nets.	Goa and Karnataka
4.	Dug out boat	Cast nets, boat Seiner	Mostly west coast.
5.	Cattamarams and Tuticorin type boats.	Drift nets, lines, Gill nets, Boat Seiner	Mostly East West
6.	Masule boat	Drift nets, drag nets.	Andhra Pradesh and Tamilnadu.
7.	Chandi type boat	Bag-nets, Seiner, Drift nets.	Orissa and West Bengal.
8.	Pablo Boat	Long-lines, Gill nets Drift nets.	On both coasts
9.	Mechanised vessels	Shrimp Trawl	On both coasts.

Source: Marine Fisheries Information Service (August 1981).

Eventhough, India is one of the major fish exporting nations in the world, it does not come under the top 10 major fish exporting countries in the world. The top 10 major fish exporting countries in the world are given in Table VI. In this table we find that the major item exported is the frozen shrimp followed by frog-legs, lobster and cuttle fish. No doubt why the prawns, lobsters and cuttle fish have the highest price in the fish market. The markets where the frozen shrimps are exported from India are Japan and U.S.A. (figure - I). The Table VII gives the major importers of Indian marine products and their share in our exports and the table VIII gives the major markets for different items of Indian marine products and their share in our exports. The table IX gives the pattern of marine products exports in India.

The figure No.1 & 2 show the organizational set-up of the Fisheries Administration in the Government of India and the Nodal organizations and specialised Institutes under their administrative control.

EXPORTS OF FROZEN SHRIMP FROM INDIA TO MAJOR MARKETS

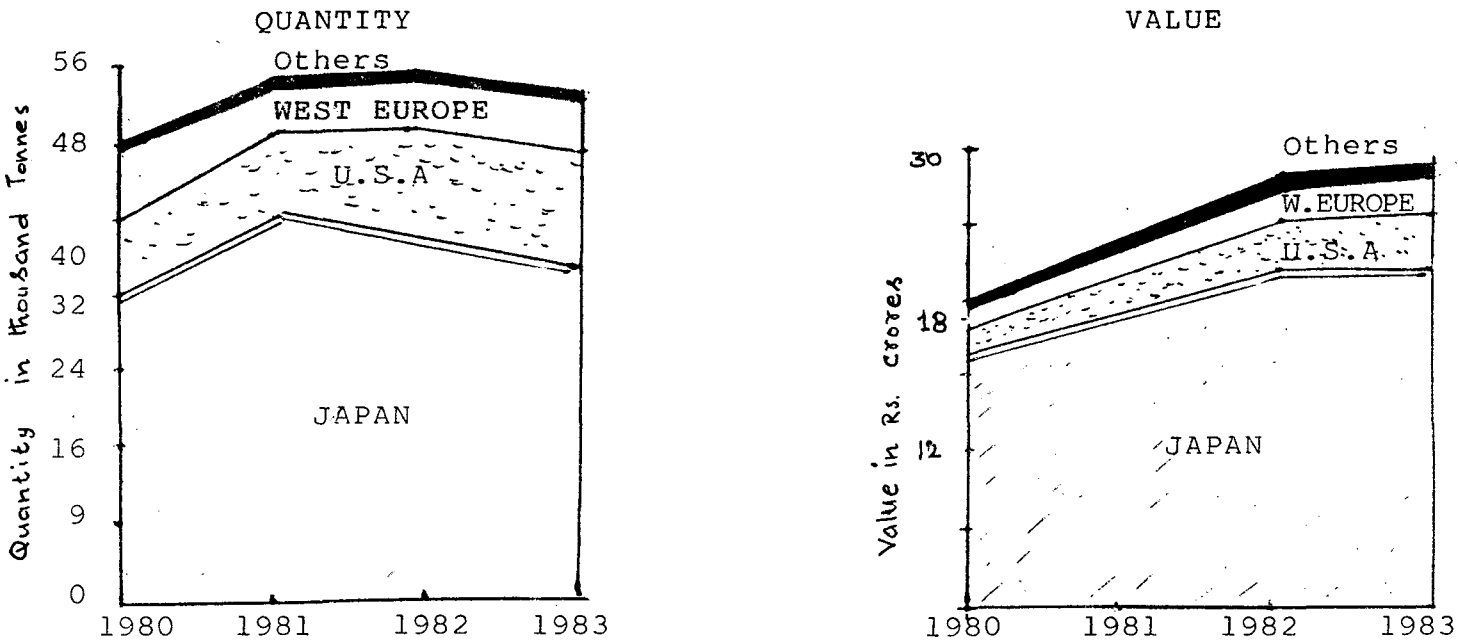


Fig: 1

Source: MPEDA, Statistics of Marine Products Exports,1983

TABLE- VI

TOP TEN FISH EXPORTING COUNTRIES OF THE WORLD.

(1973 - 1981)

Q : Quantity in 'ooo' Tonnes

V : Value in Million US $

Countries		1973	1974	1975	1976	1977	1978	1979	1980	1981
Canada	Q:	3549	299.4	301.6	349.6	442.0	482.2	472.6	477.0	520.7
	V:	490.7	433.3	441.9	598.8	756.6	989.1	1114.8	1088.7	1267.3
U.S.A.	Q:	253.2	221.8	196.3	220.0	226.0	350.0	355.0	466.5	454.3
	V:	285.2	252.6	298.0	371.9	508.1	895.7	1070.8	993.4	1142.0
Denmark	Q:	506.8	572.9	611.2	671.1	617.4	600.0	658.8	754.1	736.8
	V:	381.9	439.8	426.8	586.3	628.9	731.2	859.1	999.5	940.4
Norway	Q:	770.4	577.6	770.1	864.8	899.2	663.9	749.4	659.3	726.8
	V:	514.1	517.2	515.4	654..6	805.4	759.8	890.9	974.7	1001.7
Japan	Q:	674.2	706.2	593.4	642.4	582.9	745.1	714.6	716.6	683.1
	V:	553.9	609.1	390.0	659.4	631.4	754.8	719.9	905.2	863.2
Korea	Q:	178.2	146.7	395.7	284.8	513.9	469.7	436.9	412.3	377.9
Republic	V:	146.2	169.0	361.1	321.5	696.7	639.3	795.4	677.7	834.9

Contd..

Countries		1973	1974	1975	1976	1977	1978	1979	1980	1981
Iceland	Q:	323.1	300.2	365.9	325.2	396.0	482.8	558.6	542.9	489.3
	V:	212.1	248.3	243.5	316.8	381.1	506.8	594.9	708.6	712.6
Netherlands	Q:	238.4	217.1	235.0	227.5	232.8	274.2	322.9	346.8	436.7
	V:	207.9	251.9	258.0	279.8	314.7	399.6	503.5	524.6	511.6
Mexico	Q:	42.8	38.2	47.5	46.9	52.0	55.1	55.8	51.0	57.4
	V:	116.7	135.7	160.6.	205.2	197.1	392.7	452.7	432.2	338.5
Spain	Q:	188.2	195.7	178.4	232.1	190.1	200.1	210.1	164.1	256.1
	V:	169.2	208.6	181.9	245.0	236.4	281.0	410.2	365.2	439.9
Total World Export	Q:	6894.0	7082.9	7676.9	7960.0	8131.1	8998.1	9752.9	1079.6	10010.4
	V:	5542.0	6017.3	6360.8	9924.8	9343.3	11854.6	14115.9	15098.0	15801.1

Source : F.A.O Year Book of Fishery Statistics,

* Arranged on the basis of value of exports.

TABLE-VII

Major Importers of Indian Marine Produvts and their share in our Exports
(1972- 1983)

Q: Quantity)
V: Value) (in percentage)

Major Importers		1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
1. Japan	Q	34.0	47.8	42.1	58.6	44.9	42.1	43.5	41.4	49.96	55.47	53.61	43.44
	V	48.0	58.7	51.6	68.1	64.6	61.0	66.7	68.2	69.65	71.25	71.47	66.67
2. U.S.A.	Q	44.1	27.7	31.4	27.5	33.7	31.6	22.9	15.9	10.35	13.99	16.70	15.40
	V	39.1	25.2	32.1	21.7	25.8	25.8	18.2	15.3	9.17	11.69	12.91	13.35
Sub-Total	Q	79.1	75.5	72.5	86.1	78.6	73.7	66.4	57.3	60.31	69.46	70.31	58.84
	V	81.1	83.9	83.7	89.8	90.3	86.8	84.9	83.5	78.82	82.94	84.38	80.02
3. France	Q	2.8	2.0	0.7	1.8	5.1	4.4	7.2	3.9	3.21	2.64	2.64	1.83
	V	2.9	2.1	1.0	1.9	4.1	3.9	5.5	3.2	2.65	1.67	1.65	1.19
4. Netherlands	Q	0.7	0.4	0.3	0.2	0.1	0.9	1.5	2.5	4.07	3.18	2.38	2.13
	V	0.8	0.4	3.6	0.2	0.1	0.8	1.2	2.6	3.74	2.53	1.74	2.26
5. U.K.	Q	1.9	3.4	1.9	0.4	0.4	0.5	0.5	1.7	2.33	4.00	3.94	4.20
	V	2.4	4.2	3.6	0.3	0.4	0.6	0.6	2.2	2.61	3.52	3.52	4.55
6. Australia	Q	2.1	2.0	2.1	2.3	1.3	0.9	0.4	0.5	0.65	0.61	0.55	0.27
	V	2.2	2.3	2.4	2.6	1.2	1.2	0.5	0.9	0.87	0.73	0.67	0.36
7. Belgium	Q	0.2	1.6	2.0	1.0	0.7	1.1	0.5	0.6	1.57	1.13	1.08	0.87
	V	0.2	1.6	2.0	0.8	0.6	1.1	0.6	0.7	1.09	0.99	0.80	0.84
8. Sri Lanka	Q	8.2	7.4	4.5	3.7	6.7	6.2	7.6	3.7	5.47	1.14	3.28	5.59
	V	1.1	1.2	0.3	0.5	0.8	1.2	1.3	0.6	0.84	0.16	0.55	1.10
9. Others	Q	5.0	7.7	16.0	4.5	7.1	12.3	15.9	29.8	22.39	17.84	15.82	26.27
	V	3.3	4.3	2.9	3.9	2.4	4.4	5.4	6.3	9.38	7.46	6.69	9.68
Total Exports	Q	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	V	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Statics of Marine Products Exports, HPEDA, 1983.

TABLE-VIII

Major Markets for different items of Indian Marine Products and their Share in our exports. (1973-83)

(on the basis of quantity)

Items of Exports and Major Markets	Market share (%)										
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
FROZEN PRAWNS											
Japan	61.47	55.80	64.54	56.01	55.41	63.68	68.37	76.28	74.47	69.04	66.55
U.S.A.	30.79	36.91	29.07	39.50	39.49	30.92	24.51	13.85	16.05	20.61	23.27
Australia	2.50	3.52	2.60	1.36	1.09	0.49	0.74	0.87	0.55	0.64	0.38
U.K.	0.29	0.14	0.26	0.16	0.17	0.17	2.10	2.81	4.84	5.19	6.27
Others	4.95	3.83	3.53	2.97	3.84	4.74	4.28	6.24	4.09	4.52	4.53
All	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
FROZEN LOBSTER TAILS											
Japan	5.53	6.71	5.63	4.17	16.11	33.22	37.75	23.86	46.32	50.97	55.88
U.S.A.	93.16	93.18	90.72	82.87	70.40	55.21	34.32	60.12	43.24	35.77	26.70
Others	1.31	0.11	3.65	12.96	13.49	11.57	27.93	16.02	10.44	13.26	17.42
All	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

(Table VIII contd.....) (on the basis of quantity)

Items of Exports & Major markets	Market share (%) 1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
FROZEN FROGLEGS											
Netherlands	2.18	1.52	1.87	1.16	6.75	15.85	29.50	27.32	38.97	31.00	37.39
U.S.A.	64.26	79.75	46.68	45.17	37.69	35.49	27.57	17.54	29.68	36.20	23.95
France	10.36	1.29	31.86	43.48	41.50	42.21	29.74	29.77	14.80	15.94	7.69
Belgium	19.78	16.04	13.01	7.89	10.48	3.59	2.34	17.69	8.30	7.18	7.61
Others	3.42	1.40	6.58	2.30	3.58	2.86	10.85	7.68	8.25	9.68	23.36
All	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
CANNED PRAWNS											
Newzeland	0.71	2.75	1.53	6.60	-	-	1.43	0.47	0.43	-	-
U.A.E.	-	-	0.35	0.59	7.40	-	0.35	1.09	8.27	0.84	-
U.S.S.R.	-	-	-	-	-	-	-	3.78	31.33	63.11	36.26
Netherland	3.84	2.63	1.58	0.30	-	-	-	32.60	21.34	4.84	23.11
G.D.R.	-	0.47	6.10	22.89	15.06	12.04	2.12	3.32	-	-	-
U.K.	51.72	45.42	7.91	41.52	46.09	53.32	77.77	50.74	36.46	20.15	40.63
France	13.67	13.26	36.09	12.46	6.83	0.76	9.19	4.19	2.17	3.78	-
U.S.A.	15.30	22.78	8.55	4.03	-	-	-	-	-	-	-
Canada	2.22	1.19	-	-	-	-	-	-	-		-
Fed. Rep. Germany	5.90	4.18	29.13	-	3.61	-	-	1.74	-	-	-
Australia	2.11	3.85	0.12	4.46	4.99	-	-	-	-		-
Others	2.53	3.47	8.64	10.15	16.05	33.88	9.09	2.09	-	7.28	-
All -	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

(Table VIII contd.....) (On the basis of quantity)

Items of Exports and Major Markets)	Market Share (%)										
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983
DRIED PRAWNS											
Hong Kong	21.11	37.50	26.16	11.86	2.13	-	-	10.43	-	-	34.40
Sri Lanka	-	-	-	-	86.30	-	-	63.72	-	41.91	-
U.S.A.	12.94	2.85	0.97	-	2.13	-	26.16	-	-	11.18	-
Singapore	4.92	3.42	0.71	-	-	-	-	-	-	-	-
U.K.	15.49	1.57	11.46	3.39	-	-	-	2.62	-	-	-
Malaysia	3.26	-	3.04	-	-	-	-	-	-	-	-
Others	37.28	54.66	57.66	85.75	9.36	100.00	73.85	23.23	100.00	49.91	65.60
All	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
DRIED FISH											
Sri Lanka	89.96	79.24	43.57	89.27	90.78	93.93	90.18	90.61	55.52	84.94	98.02
Mauritius	7.32	17.50	10.39	7.87	7.60	4.02	5.27	-	21.03	2.90	0.26
Others	2.72	3.26	46.04	2.86	1.62	2.05	4.55	9.39	23.45	12.16	1.72
All	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Note: - represents nil.

Source: Statistics of Marine Products Exports, MPEDA, 1983.

TABLE : IX

Pattern of Marine Products-Export From India

(1975 - 1985)

Q: Quantity in tonnes
V: Value in Rs.'000

Item		1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85
Frozen Shrimps	Q:	46489	49375	50067	51162	51068	51358	52180	55002	54444	55398
	V:	1105755	1679857	1583020	1947849	2112483	2017844	2479458	3161517	3148081	3296954
Frozen Froglegs	Q:	2039	3020	2899	4087	2926	3452	4065	1896	2428	2778
	V:	48917	71707	66739	99163	63367	84054	112007	47192	66836	77749
Frozen Lobster	Q:	405	512	637	732	560	610	694	749	548	1082
	V:	20353	33049	39648	51431	40623	34826	51468	68551	51508	78910
Frozen Cuttle Fish/Fillets	Q:	1239	752	977	1062	1551	1220	1819	2305	1526	1966
	V:	35828	12581	14210	19060	42861	19399	41244	62683	33797	50950
Frozen Squids	Q:	52	566	654	2755	2244	1705	1387	1222	2050	1663
	V:	370	6793	6771	36937	29610	19732	17437	20079	26911	30020
Fresh/Frozen Fish	Q:	325	2753	3140	16757	22629	8769	6760	12847	22573	9091
	V:	3886	29436	31716	97539	133186	82394	96193	188669	290986	143980
Canned Shrimp	Q:	164	124	129	197	231	281	82	65	41	29
	V:	3758	4560	5670	8785	11305	11264	4168	4354	2406	2049
Dried Fish	Q:	2411	5372	4230	6909	3357	3887	1022	2597	6492	11828
	V:	9827	21521	22625	36603	15652	24355	7371	20978	53525	99966
Dried Shrimp	Q:	79	29	235	19	19	113	55	90	28	80
	V:	993	209	1712	285	158	1232	800	731	455	1075
Shark Fins & Fish Maws	Q:	289	292	289	416	341	390	358	156	250	249
	V:	9859	18119	24922	33242	26835	36446	37308	19936	32714	33892
Misc. Items	Q:	971	3955	2710	2798	1475	3806	1683	1246	2211	2023
	V:	5746	13338	12472	15333	12160	16880	12600	18923	22975	27352
Total	Q:	54463	66750	65967	86894	86401	75591	70105	78175	92691	86187
	V:	1245292	1891170	1809505	2346227	2488240	2348426	2860054	3613613	3730204	3842897

Source: Statistics of Marine Products Exports, MPEDA, 1983.

ORGANIZATIONAL SET-UP OF THE FISHERIES ADMINISTRATION IN THE GOVERNMENT OF INDIA.

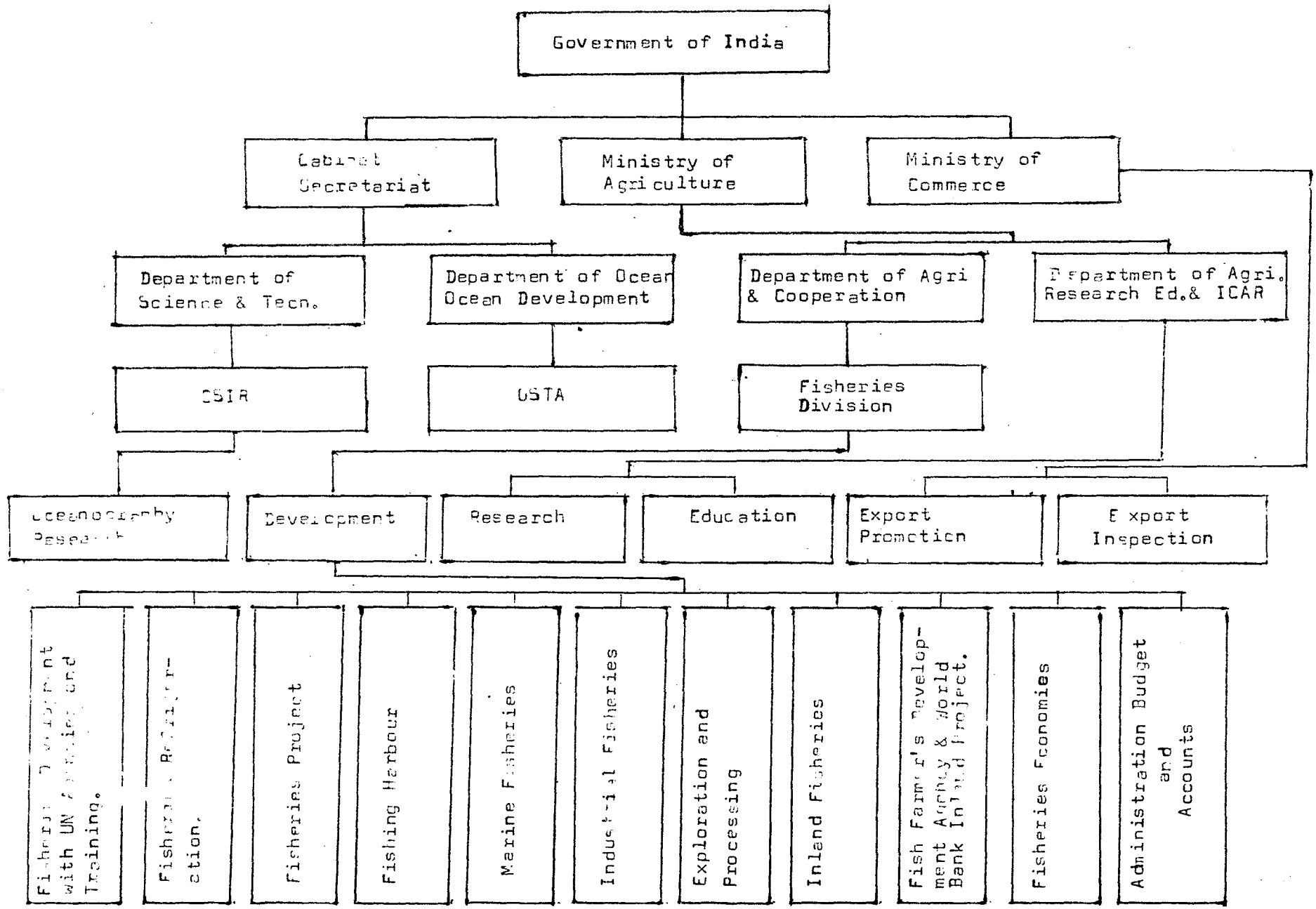


Fig.2

NODAL ORGANISATION AND THE SPECIALISED INSTITUTES UNDER THEIR ADMINISTRATIVE CONTROL.

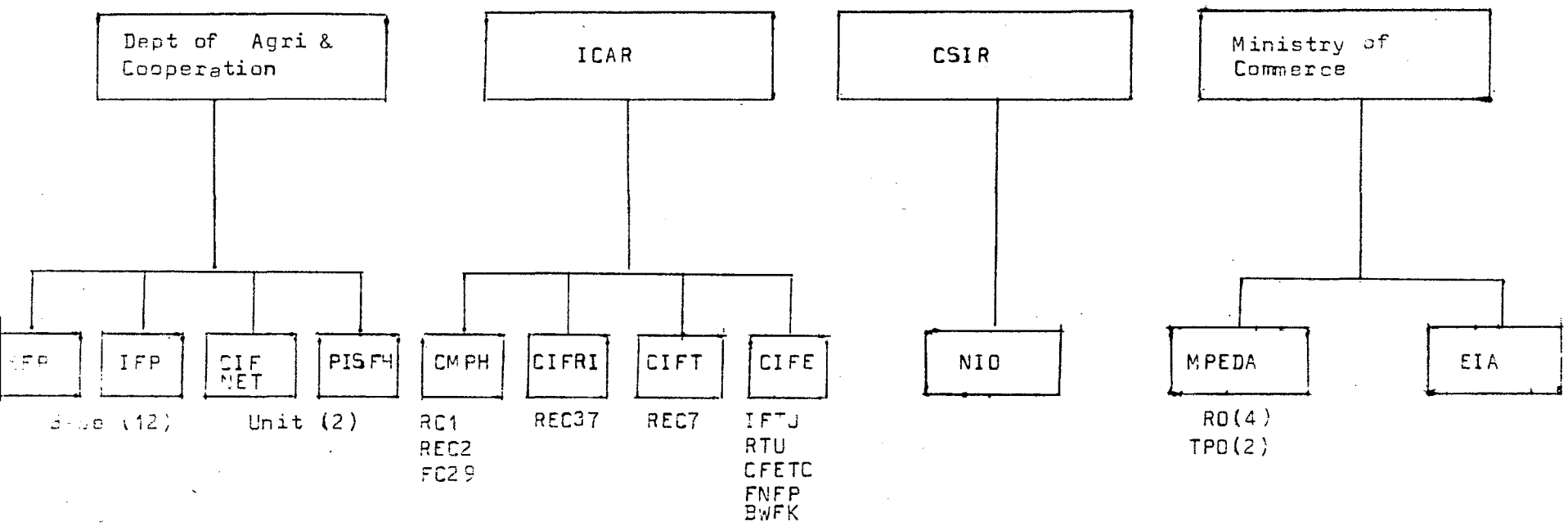


Fig.3

EFP	Exploratory Fisheries Project, Bombay (Estd. 1946)
IFP	Integrated Fisheries Project, Cochin (Estd. 1952)
CIFNET	Central Institute of Fisheries Nautical & Engineering Training, Cochin (Estd. 1963)
PISFH	Pre-investment Survey of Fishing Harbours Project, Bangalore (Estd. 1968)
CMFRI	Central Marine Fisheries Research Institute, Cochin (Estd. 1947)
CIFT	Central Institute of Fisheries Technology, Cochin, (Estd. 1957)
CIFE	Central Institute of Fisheries Education, Bombay (Estd. 1961)
NIO	National Institute of Oceanography, Goa (Estd. 1966)
MPFDA	Marine Products Exports Dept, Authority, Cochin (Estd. 1972)
IFTU	Inland Fisheries Training Unit, Bangalore (Estd. 1947)
RTC	Regional Centre for Marine Fisheries Operations, Agra (Estd. 1967)
CFETC	Central Fisheries Extension Training Centre, Hyderabad (Estd. 1973)
FWFF	Fresh Water Fish Farm, A.P.
BWFF	Brackish Water Fish Farm, A.P.
EIA	Export Inspection Agency.
RC	Regional Centre
REC	Research Centre
FC	Field Centre
RO	Regional Office
TPO	Trade Promotion Office
RU	Research Unit

Tamil Nadu has a coastline of 620 miles and there are seven marine districts in Tamil Nadu. They are Madras, Chinglepet, South Arcot, Tanjore, Ramanathapuram, Tirunveli and Kanya Kumari Districts. The total number of marine fishing villages in Tamil Nadu is 422 and landing centres 375. The fishermen population in Tamil Nadu as on 1982 was 3,97,542 out of which 53,253 are engaged in actual fishing occupations. According to the Govt. of Tamil Nadu Report on 13th Live Stock Census, 1982, there were 3,785 mechanised boats and 52,850 non-mechanised boats in Tamil Nadu. The estimated number of fishing gears as on 15.7.82 was 1,97,945. Tables X and XI give the total number of fishing gears and the mechanised and the non-mechanised crafts. The type of fishes caught in the state are given in Table XII.

Among the marine states, Tamil Nadu has the highest number of fishing villages and ranking next in the order are Andhra, Kerala, Maharashtra, Gujarat,Orissa and West Bengal. But the active fishermen population is the highest from Kerala followed by Tamil Nadu, Andhra, Karnataka, Gujrat, Orissa and West Bengal (Virabhadra, 1977). In Tamilnadu the maximum number of fishing families is in Kanyakumari District. A comparison of the census Data collected in 1980 with those of 1975-76 shows that the number of fishermen population and

TABLE X

FISHING GEARS BY TYPES AND MATERIALS
IN TAMILNADU (1982)

Type of Fishing Gear	Number	Percentage of Total
Total Fishing Gears	1,97,945	100
Drag Nets	26,218	13.24
Gill Nets	81,248	41.05
Trawl Nets	13,766	6.95
Trap Nets	9,041	4.57
Shore Seines	4,912	2.48
Spaun Collecting Nets	2,407	1.22
Other types	28,424	14.36

Source : 13th Live stock census Report, T.N. 1985

TABLE XI

NON MECHANISED BOATS AND CRAFTS
IN TAMILNADU (1982)

Type of Boat/Crafts	Number	Percentate to Total
All type (Total)	52,850	100
Beach Seine Boats	6,197	11.73
Plank Built Boats	4,738	8.96
Dug out canoes	1,441	2.73
Cattamarams	38,821	67.78
Other non-mechanised Boarts & Crafts	4,653	8.80

Source : 13th Live Stock census Report, T.N., 1985.

TABLE XII MARINE FISH LANDINGS IN TAMIL NADU

(1972-1982-83)

(Figures in Tonnes)

S.No.	Species	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981-82	1982-83
1.	Elasmobranchs	12,900	12,844	23,025	20,614	19,039	18,327	15,121	12,393	15,442	12,877	15,139
2.	Eels	47	121	226	110	620	232	325	119	85	190	97
3.	Cat Fishes	5,353	9,861	10,322	7,469	5,033	15,205	5,252	5,617	4,047	5,487	4,295
4.	Chirocentrus	2,320	3,178	1,625	1,811	2,058	2,475	1,736	1,839	2,695	2,220	2,369
5.a)	Oil Sardines	146	45	-	-	-	714	36	1,011	320	295	1,094
b)	Other Sardines	21,051	26,059	15,430	35,610	25,169	26,259	21,050	32,289	29,940	22,741	25,255
c)	Hilsa ilisa	170	10	14	121	22	343	161	41	37	113	164
d)	Other Hilsa	2,088	1,349	681	1,158	2,331	5,784	4,166	2,761	3,084	3,884	4,262
e)	Anchoviella	4,378	9,105	10,745	10,873	7,869	13,308	7,447	11,061	13,126	7,681	9,539
f)	Thrissocles	5,278	4,821	4,645	3,127	8,362	3,008	4,719	5,542	5,048	6,249	4,488
g)	Other Clupeids	3,107	3,706	2,815	5,406	15,851	2,652	3,043	3,864	1,833	4,769	6,082
6.a)	Harpodon Nehereus	48	235	-	1	-	14	-	1	6	-	8
b)	Saurida & Saurus	92	871	1,186	1,026	823	572	1,100	1,498	1,123	1,741	1,752
7.	Belone & Hamirhampus	403	675	3,949	1,482	717	1,574	759	624	749	823	838
8.	Flying Fish	1,290	6,221	726	1,657	1,232	526	1,092	1,599	1,106	2,464	1,611
9.	Perches	6,350	4,914	8,426	8,153	5,341	7918	9,241	5,919	6,886	8,141	13,688
10.	Red Mullets	1,311	1,010	1,959	1,566	626	832	1,963	1,448	1,079	1,247	1,768
11.	Polynemids	906	1,306	877	1,339	1,944	1,592	706	353	629	240	374
12.	Sciaenids	6,221	10,607	9,943	10,096	10,562	13,756	14,239	18,948	19,547	19,994	16,622
13.	Ribbon Fish	10,498	9,625	8,369	17,782	19,054	4,594	28,664	21,040	7,862	7,513	6,254
14.a)	Caranx	7,109	5,624	5,188	6,225	7,082	6,120	3,104	7,022	5,405	1,467	716
b)	Chorinemus	1,045	843	1,545	1,090	646	1,469	971	844	1,111	827	456

contd....

Marine Fish Landings in Tamil Nadu
(1972-1983)

(Figures in Tonnes)

S.No.	Species	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981- 1982	-1983
	c) Tranchynotus	-	-	2	-	28	73	84	182	38	-	-
	d) Other Carangids	29	9	2	8	907	22	171	23	188	8,154	7,585
	e) Oryphaena	24	32	77	65	105	58	18	37	141	-	-
	f) Elacate	280	75	101	87	217	230	239	535	148	-	-
15.	a) Leiognathus	21,564	22,133	23,906	20,412	29,644	17,783	30,281	42,886	38,153)	52,682	45,705
	b) Gazza	62	34	28	29	6	54	104	197	84)		
16.	Lactarius	1,348	2,823	722	1,822	175	740	840	1,323	938	449	537
17.	Pomfrets	461	1,705	720	1,303	822	628	789	877	1,306	1,070	1,174
18.	Mackeral	7,838	8,843	2,639	5,826	10,488	5,674	1,453	3,521	7,229	4,425	3,744
19.	Seer Fish	6,010	5,763	5,178	3,784	3,784	6,424	4,700	5,523	7,179	5,016	5,633
20.	Tunnies	658	624	1,691	1,785	2,923	2,238	1,169	3,211	4,233	3,585	3,473
21.	Sphyaena	997	858	800	1,506	1,554	1,702	2,147	1,463	932	1,190	1,621
22.	Mugil	266	1,449	261	1,566	285	923	829	229	577	373	449
23.	Soles	588	683	1,247	785	909	908	1,580	2,337	2,094	1,912	2,833
24.	a) Penaeid Prawns	4,885	4,504	8,060	11,460	8,864	8,197	13,327	10,222	9,082	15,582	13,049
	b) Non-Penaeid Prawns	148	1,285	46	573	169	159	585	997	946	803	410
	c) Lobsters	-	-	-	465	525	286	249	340	90	207	325
	d) Other Crustanceans	9,519	7,719	9,752	13,896	16,413	11,018	9,290	5,833	6,174	12,451	12,213
25.	Cephalopods	248	426	955	2,953	1,451	1,375	1,042	1,903	1,472	2,463	3,689
26.	Miscellaneous	7,297	9,924	7,754	16,128	11,808	19,204	19,107	17,181	15,230	14,098	16,642
	Total	155,153	182,418	175,713	221,215	226,078	206,046	212,899	235,008	217,394	235,423	235,953

Note : Till 1974 Lobsters were included in other Crustaceans.

Source : Statistics of Marine Products Exports, MPEDA, 1983

those engaged in actual fishing increased by 27 percentage and 11 percentage respectively. Kanyakumari District continues to lead both in the total fishermen population and the number of fisherman engaged in actual fishing. The number of indigenous fishing crafts increased by 42 percentage. The number of catamarans increased by 30 percentage and the dug-out comes 25 percentage (Fishery Resources Assessment Division, 1980).

The 'Wadge Bank', the richest fishing ground in the world is of the south coast of Tamil Nadu i.e. 40 miles away from the coast of Kanyakumari District. The Wadge Bank has an area of 13,5000 sq. km. and has a potential of 25,000 tonnes of fishes of high quality (Sreenivasan, 1981). The fishermen in Kanyakumari coast call this 'bank' in their local languages as 'Surapal' meaning place of sharks as they find many sharks in this area. They also say that the foreign fishing vessels are very often found in this area. One of the types of fishing in Kanyakumari District is known as the "thanguottam" which means, the fishermen sail their catamaran and carry out fishing remaining for two or three days continuously in the sea. Actually their fishing operations take place near the 'Wadge Bank'. But at present this method of fishing has become a rare phenomena because of the mechanization and commercialization of fishing and the rush for 'pink gold'.

At the extreme south of Tamilnadu, the Kanyakumari District has a coastline of 45 km and a high density of fishermen (1000/sq. km) settled in crowded villages (Gillet, 1978). There are 42 fishermen villages in Kanyakumari Distridt and the fishermen population as on 1982 is 1,18,387. According to the Govt. of Tamil Nadu Report on 13th Live Stock Census, 1982, in Kanyakumari District there are 85 Beach-Service Bank, 530 plank brass, 138 dug-out canoes, 11616 catamarans and 1913 other crafts. The main part of the coast faces the Arabian sea and each village depends mainly on the fishing grounds which are normally restricted to the strip of sea facing it. The fishermen in Kanyakumari District are known for their courage because they, with their catamarans, go as far as 50 to 60 miles away from the coast to catch shoaling fishes and bottom dwelling fishes and return to their homes with a keen sense of direction. (George, 1978).

II. THE FISHERMEN

The word 'fishermen' refers to that 'category of persons who earn their main source of livelihood by actually activel being involved in the process of catching fish using non-mechanised means of production (Kurien, 1978). However, we cannot restrict this meaning only to the artisanal fishermen,

because other fishermen, who work in the mechanised boats are also exploited in many forms. Kurien has analysed the life of fisherman under three headings, viz. fisherman as "a person", as "a member of community" and as "a professional". As a person the fisherman's concepts, attitudes and his whole 'world-view' are influenced by nature and his whole psyche is conditioned by his relationships with nature. He is overtly generous, willing to share what he has with others. He is also superstitious because of his close dependency on nature in which he takes a great risk to life by fighting against the strong waves and currents of the sea. Finally he faces socio-economic forces in the name of modernization, that act to break open old isolation of the traditional fishing communities, have either destroyed these characteristics, distorted them or have used them to exploit fisherman more effectively, (Kurien, 1978).

As a member of a community, he enjoys a very low status and finds himself on the lowest rung of the social ladder. They have been isolated and unorganised. The religious structure to which they have high fidelity, subtly subjugates them to their control. In Kanyakumari district the fisherman community is predominantly a Christian community converted by St. Francis Xavier in the 14th Century. The Catholic hierarchy have been exercising a heavy control over the fishermen and

even today the Church exercises levy from the fishermen dommunity. The Parish priest has been consiuered as the leader of the community and in matters of village administration, he has a final say. However, this phenomena has been highly deteriorating due to the awareness created in the fishermen communities by certain radical social action groups and movements.

The fisherman's professional capacity is to be admired and marvalled. In fact, in some cases, their professional touch in fishing qutwit the mechanised fishing. The fisherman's primary assets are his body power, his skills, his accumulated knowledge of fish varieties and habits, currents and tides, astronomy and naviation transmitted through verbal communication, apprenteeship and training. (Iyengar, 1985). Fishing for three or four days beyond land visibility, at depths of 100 mts and 150 mts and running at night exactly to their village landing site with the aid of the stars; an intelligent understanding of the influence of currents, winds and lunar forces on the movement and occurance of fish shools, comprehensive knowledge of the different fishing grounds; the species of fish and their food habits; all highlight their comprehensive, scientific and intricate grasp of the totality of their eco system (Kurien, 1978). Their professional competency cannot be challenged eventhough there are no books, no charts and research papers. Their professional, techniques and skills are not taught, but they are learnt by their younger

ones by experience.

But, it is these fishermen, who are branded, unscientific unskilled and resistant to new techniques, by the people who plan for the people. In their wisdom, the well-being of fishermen could be promoted only through modernisation, totally neglecting the professional and scientific skills of the fishermen. The well being of fishermen is shaped by various factors like the ownership pattern, resource-base, fishing technology, the marketing structure, the credit system and the high demand for fish from the developed countries which control the entire production in the developing countries. These factors and forces do not stand in isolation as they influence each other and hence cannot be analysed separately. In a way it is the modernisation/mechanisation of fish economy which act as the major weapon of these forces which in turn play a vital role in protecting and improving the well-being of fishermen. The subsequent parts of this chapter will highlight the following aspects such as the ownership pattern, credit and marketing system with reference to the concept of production relations, Fisheries Development versus Fishermen's Development, the use of Modern Technology and its impact, with the help of liaterature reviewed on these aspects.

III. OWNERSHIP PATTERN

The inequality that exists in ownership pattern in our country, is so intense that the poor are always kept under oppression. The ownership pattern that exists among fisherman communities is an outcome or the reflection of the ownership pattern that exists in our society at large. In India - upper class-middle class, they are the powerful lobby - political power in underdeveloped countries is held nearly every share by the privileged groups - including big land owners, industrialists, bankers, merchants and higher military and civilian officials (Myrdal, 1972). The Independent India still bear an indeliable mark of its socio-cultural fabric and its economic and administrative patterns (Dube, 1984). Thus in independent India, the capitalistic form of accumulation and ownership exist in a larger extent inspite of our lead rs professed democratic socialism. There are two implications inferred from the ownership pattern in India (1) The ownership is enjoyed by a few individuals (2) The actual producers do not own the capital and its benefits.

In fishermen community also, the similar kind of ownership exists to some extent. However, the ownership pattern that exist among fishing community is to be understood

in the light of the concept of ownership. Ownership means "legal category for the resultant state of having purchased property, (Russel, 1981). The term ownership has a legal implication i.e. the owner has the right to possess and dispose it off whenever he wants. In the case of fishermen, perhaps the main assets they have are their fishing gears and crafts. Most of the fisherman have borrowed money from the money lenders to buy crafts and gears. Hence, the borrowers i.e. the fishermen cannot dispose off their crafts and gears as long as they remain indebted to the money lenders eventhough the crafts and gears are bought by the fishermen in their names. This invisible control exercised by the middlemen and merchants deprive the fishermen of their right to ownership. Eventhough the crafts and gears are under the possession of the fishermen, they do not enjoy full and complete legal hold over them as the money lenders may take away crafts and gears at any time from the fishermen to whom they have lent money. A study conducted in Poonthura, Kerala, revealed that the ownership of fishing equipment is confirmed to 31.9 percentage of which actual fisherman constitute only 27 percentage and this would imply that overwhelming majority (85%) of the fishing group are not owners of the means of production, (Kandathil, 1981).

However the ownership pattern in the fishing community can be divided into three categories (1) the individual ownership

i.e. the individual fisherman or family invest their own money to buy crafts and gears for fishing and have not borrowed money from money lenders for this purpose. (2) Collective ownership, i.e. a group of individuals together by contributing a proportional share for buying crafts and gears and they do not have any link or tie with the money lenders in this regard. (3) Quasi-ownership i.e. an individual fisherman or a family buys crafts and gears for fishing by borrowing money from the money lenders on the condition that in the case of former's inability to repay the credit or his irregularity in paying the interest in the form of fixed commission, the fishing crafts and gears may be auctioned by the latter to recover the loan. Here a distinction must be made i.e. in this pattern of ownership, either the whole amount needed for buying the fishing craft and gear is advanced by the money lender or partial amount is given as loan. Usually, the fishermen loses his ownership status only when he has borrowed the entire money from the money lender. It is called quasi-ownership because the fishermen has the right to operate the crafts and gears without the prior permission from the money lenders and the crafts and gears are fully under his control when he is fishing at sea. However, it is a relative and disputable process to many social scientists.

One of the determinants of the income of fisherman is his ownership capacity (Vattamattam, 1978). The higher the

number of fishing crafts and gears the higher the income generated. Again, the type of ownership the fishermen enjoy also determines their income as in the case of 'quasi-ownership' pattern, a large share of the income is taken by the money lenders. Even though there are one or two fishing crafts and gears in most of the fishing families, it is always only a few families who have more access to fishing assests especially the gears.

Platteau, Muricten and Delbar describe the pattern and the salient features of ownership in their case study in a village called Purakkad in Kerala. In their study it is revealed that only a few households (7 percentage of all the households and 25 percentage of the equipment owning households) have fishing capital necessary to provide fulltime employment to all their members engaged in fishing (Platteau etal, 1981).

According to this study the joint or collective ownership system normally involves three main successive steps. (1) In the first step each would be owner, contributing certain amount of money. But this equity capital is never sufficient to cover the total cost of the investment, (2) as a second step, the joint owners resort to collective borrowal, which means that they address themselves as a group to any willing leader and (3) in the third step, they seek the permission of the manufacturer of the craft to operate the newly acquired

fishing craft in case of their inability to settle the full account which is called a 'sellers credit'. In this case, neither the lender nor the manufacturer has any ownership status as neither of them can auction the craft in case of the groups' inability to settle the account. But this happens mainly in the case of procurring 'Vallams' or boats. In the case of catamarans this seldom happens as the capital needed for investment is very less. In the case of boat-owners, very often the ownership is transferred to the local money lenders or fish merchants, as the initial owners were not able to provide for the proper maintenance and repair of their boats (Platteau, 1982). From the above analysis the following inferences are made :

1. Inequality exists in the ownership pattern of fishing communities in relation to the total number of crafts and gears.

2. Among the fishing equipment owners, the large numbers of fishing equipments are owned by a very few members of the fishing community and the large number of fishermen own only very few fishing equipments.

3. The fishermen's status to ownership of fishing equipment is not real and complete as the money lenders exercise a heavy control over the holding of fishing equipments.

4. The inequality in the asset holding among fishermen is one of the causes of their poverty (Kurien, 1981).

IV CREDIT AND MARKETING SYSTEM

The credit and the marketing systems in fish economy has to be seen together as they are closely interwovened. The relationship between credit and marketing is prevalent not only in fish economy, but also in any kind of economy for that matter, especially in the developing countries. This is because of their dependence on the developed countries in the former's path towards economic development. The developing countries have consolidated their political independence, but remain in a vulnerable position externally. They operate in an international economic order which they have played no part in establishing and which accords them little decision making power (Meagher, 1979).

In the form of aid and development strategies, the developed countries provided 'credits' to the developing countries, but held an absolute control over production and marketing systems and create a dependency on the part of the latter to the former. The same pattern of credit and marketing linkages exist in fish economy too. In order to understand the credit system in fish economy, it is necessaryto understand the types of money lenders who play a dominant role in the functioning

of fish economy. The money lenders can be divided into three broad categories.

(1) Market tying money lenders - are those who advance money to the fishermen either to buy fishing equipments or to relieve them from other financial ties with a view that the debtors will sell the fish directly to them for marketing. Usually, this type of money lenders are the fish merchants who link credit directly to marketing system and these fish merchants advance money mainly to the fishermen who own more fishing equipments. The larger the number of fishing equipments owned, the higher the amount of credit given. This money lenders are usually big exploiters as they always use credit as a market tying mechanism (Kurien, 1978).

(2) Labour tying money lenders - are those who advance money to the fishermen with a view that the debtors will continue to operate the fishing equipments, owned by the creditors till they repay the entire debt. This is mainly prevalant in the mechanised fishing sector. In this type of money lending, certain elements of 'bonded labour' is attached even though some scholars disagree on the ground that these labourers can free themselves from a particular money lender by repaying the debt with the help of receiving loan from another money lender. Yet, the fact is that these fishermen still remain as labourers to other money lenders. In such a credit system there is a strong

competition among the employees when it comes to attracting or to keeping comparatively healthy and skilled fishermen. This type of lending money exists mainly to reduce the risk of under-utilization of the productive assets owned by the employers (Platteau et al 1981). This system of money lending exists in almost all the marine states in India. In Tamilnadu, it is widely prevalent in Tiruelvelli district. The interesting phenomena here is that the crew-labourers who take money from money lenders of Tiruelvelli district are mainly from Kanyakumari district. The fishermen from Tiruelvelli are called 'Paravas' and the one from Kanyakumari district are known as Mukkuvas; even though there are some 'peravas' in the coastal villages of Kanyakumari. The Mukkuvas are not respected by paravas. Thus there is a class distinction even among fishermen. There are also many other social taboos, such as the 'Mukkuvas' are not allowed to participate in the village meetings of the Paravas in Tirualvalli district where the former is not allowed to live along with the latter, instead they are kept in colonies at the outskirts of the Parava villages.

(3) Middlemen - money lenders - are those who on the shore live off the fishermen and the merchants with whom they come into contact (Kurien, 1978). These middlemen advance money to fisherman with a view to charge a nominal interest or 'commission' at the time of sale. Invariably they also act as 'auctioneers'

of fish and hence they some how or other have a contact with the local commission they charge varies from place to place. In fact they play some role in fixing the price for the catch.

The immediate question that creeps into the mind after knowing the types of money lenders, is the security against which the money is lended. It might be surprising to note that the amount of money borrowed were granted on a mutual basis i.e. no security was required from the borrowers (Platteau et al, 1981). However, there were cases in which gold and fishing equipments were offered as security. A distinction is to be made in this connection, i.e. when the money is borrowed for buying fishing equipments, usually gold is given as security if at all the borrowers have gold. The fishing equipments and/ or gold are given as security, mainly at the time of lean season. It is interesting to note that most of the fishermen prefer to borrow money from the local money lenders, than from the banks because the former usually not require any security nor there is any monthly repayment and the loan is easily available and accessible. Yet the intricacies and that run through this system play a vital role in determining the well-being of fishermen, often resulting in the exploitation and oppression of fishermen. The commission agents in particular, who advance large term loans, have benefited disproportionately from the prawn boom because by functioning simultaneously as money lenders and

auctioneers they exercise control over production and marketing (Platteau, 1981).

The impression one gets while going through the extensive specialised literature is that in the backward rural areas of third-world countries, credit not only plays a crucial role but also performs a variety of functions that cannot be adequately analysed in terms of a single monolithic model or theory (Platteau and Abbraham, 1981). In the following table XIII both the scholars give the main characteristics of various credit or quasi credit systems at work within traditional communities.

In the opinion of the same authors, in traditional village communities credit and transactions can serve the functioning of 'formal insurance contracts' in modern society and such aninsurance motivated systems of credit have the following three specific features :

1. Loans are given only if the debtor agrees to enter into a broader relationship with the creditor, and to commit himself to fulfilling certain obligations that lie beyond the initial loan transaction terms. But we know that the living conditions of the fishermen is such that they have to blindly agree to fulfil the obligations put forward by the creditors and they have

TABLE XIII

Main Characteristics of Various Credit or Quasi-Credit Systems at Work Within Traditional Communities

	Objective pursued (1)	Return of the gift (loan) (2)	Time of gift(loan) repayment (3)	Quantity & Quality of what will be returned (4)	Interest (explicit) (5)	Utilisation of the gift (loan) (6)	Security (7)	Initiative of the deal (8)
I. Govt. exchange								
A) Generalised reciprocity	Hunger insurance	Unc	Unc	Unc	Nil	Subsistence consumption	Trust	Receipient & possibly the owner.
B) Balanced Reciprocity	Control of potential rivals & recognition of rank.	Unc	Unc	Unc	Nil	Consumption of essential	Honour	Donor.
C) Petits Small gifts	Maintaining Friendship Ties.	Unc.	Almost immediate.	More or less certain.	Nil	Consumption	Friendship	Donor
II. Reciprocal credit	Hunger insurance	c	Unc	c	Nil	Subsistence consumption	Trust & Social sanction	Borrower & possibly the lender.
III. Standard credit	Intertemporal allocation of wealth.	c	c	c	+ve	Undetermined (consumption or investment)	Collaboration	Borrower
IV. Labour tying credit	Insurance against risk of labour shortage.	Con.	Unc.	c	Nil	Subsistence consumption	Interlinked deal.	Lender or borrower.
V. Marketing tying credit.	Insurance against risk of insufficient supply.	Con.	Unc.	c	+ve	Involvement	Interlinked deal	lender or borrower.

In the above table: Unc= Uncertain; c= certain, Con=Conditional.

Source: Platteau Abraham (1981).

no say in fixing the conditions.

2. The time for the repayment of the loans is uncertain and the repayment may even be conditional upon the decision of the debtor to stick to or to breakout of the broader relationship he has engaged into with the lender (in the case of interlinked transactions). But this uncertainty of time, makes the fishermen to get more and more credits and as a result they become more indebted. Hence, in a way this feature also has a string attached to it as it evokes and encourages the fishermen to be handcuffed by the chains of the credits provided by the money lenders. Another implication is that the more money the money lenders invest the more income they get from it.

3. The price of credit is either formally zero or it is blurred in a way that renders its assessment especially difficult. In the case of market tying credits, the credit gets a higher price. This aspect will be dealt elaborately in the subsequent paragraphs.

According to Platteau et al, the credit system has mainly three functions or the 'interlockings' viz. (i) credit as a Hunger Insurance Mechanism (ii) Credit as a Labour tying device and (iii) The interlinkage of credit and production and marketing relations. However, the last function is given more

importance because fish marketing in India is the breeding ground for merchant capitalists and middlemen who reap the benefit. Thus the system of credit in fish economy is used as a means for abstracting the surplus value produced by the fisherman by their hard labour and keeping them under the thump of the oppresive forces exercised by the money lenders and the merchants.

PRODUCTION RELATIONS

The production system in fish economy is conditioned by many factors i.e. the quality and the quantity of the fishing equipments operated by the fishermen, the professional skills and techniques the fishermen posses, the resource base and the natural conditions. However the credit system also plays a prominent role in determining the production in fish economy, as in many cases, it determines the quality and the quantity of the fishing equipments. Eventhough the money lenders advance money for procuring fishing equipments, it is the labour exerted and spent by the fishermen that determines the quality and quantity of the production. The productive forces that is employed in the production process, determines heavily the production. The productive forces include people and means of labour i.e. the objects and instruments of labour. But objects of labour themselves must be either obtained or

produced by man and instruments are also results of men's labour activity (Boguslavsky, 1978). Hence in the production process, it is the man and his labour that constitute the productive forces. Classical Marxism positions that, among the factors of production, labour and labour alone is a productive force..... a piece of mechinery may be owned as capital, but even if not owned at all it might still serve as an instrument of production. What makes it productive is that one works with it and produces by means of it. The person, the producer provides the provides the productive force.....the machine enhances his productivity, and is itself the product of force, including the force of intellectual labour (Sernton, 1982).

The production is the outcome of the relationship that exists in the production process and this relationship is called production relations. The relationship and the interaction between the different classes of people who are directly or indirectly involved in the productive process is taken as production relations in fish economy and it is this production relations that is considered as mainly responsible for the well-being of fisherman who set upon nature with the available technology and within the existing social relations to produce material basis and create conditions of well being.

There are two levels of production relations that exists in fish economy viz. (1) at the harvesting level and (2) at the marketing level, because the production process does not end in the harvesting or actual fishing level itself.

It is completed only when the fishermen receive certain price for their catch. At the first level the relationship is between the fishermen, their labour, the technology used, the availability of resources in the sea and the other natural conditions conducive and congenial for catching fish. It is this relationship that determines the total fish catch in a trip. At this level, the fishermen have full freedom to use their productive forces without any control or command from the money lenders. But when the catch is brought to shore the fisheremen have no say in marketing of fish which is supposed to determine the income of fisherman. At the second level, through the interlinkage of credit and marketing there is a relationship in fish production i.e. among the money lenders/merchants, middlemen and fishermen, which ultimately denies the benefits the fishermen are going to enjoy for their hard labour. To a large extent the marketing structure determines the shore price which in turn affects the gross earnings (Kurien, 1982).

In fish economy marketing plays a key role. Therefore, it is necessary to understand the various factors that effect marketing in fish economy.

A recent market survey has estimated that for India as a whole, 53% of the population in metropolitan cities, 50% in urban areas and 56% in rural locations are consumers of fish. On an all India basis 15% of the non fish cooking house-holds have at least one fish eating member (FAO Report, 1984). The same study also has pointed out that there is an indication that the demand for fish has out skipped the supply. There are two important factors that have to be kept in mind while analysing the marketing system in fish economy (1) The fish marketing was 'welfare oriented' before the mechanization and (2) now it has become 'profit oriented', as in the former case, the fishing communities did take care of the sick, poor and the disabled ones as a part of their fish production and in the case of latter the fish economy responded effectively to the pulls of the market and adjusted its harvesting and processing activities to cater to the demands of the merchants who were quick to respond to project opportunity (Kurien, 1985).

Generally the local fish marketing is carried out by head loaders, usually the women, the cycle loaders and by small and big merchants (Blase 1983 and Iyengar, 1985). In the

southern states, especially in Kerala and Tamil Nadu, the fish is auctioned on the shore itself and taken to nearby markets and villages by head loaders and cycle loaders. Prawns, lobsters and cuttlefish are collected by agents on behalf of Kerala based companies which send their insulated vans to provide ice and take delivery of the products (Gillat, 1978).

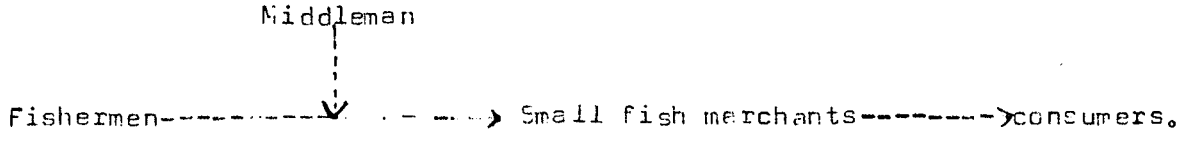
At times, a few species like anchovies, ribbon fish, sardines etc. are salted and dried by local fisherfolk and sold to merchants who take them to important marketing centre and/or export them to Sri Lanka. In Kanyakumari distridt the only mode of sale of fish is auctioning.

Auctioning also plays a key role in fish marketing as it helps mainly the fish merchants and other bidders because the merchants are generally good at assessing the quantity of fish laidout for sale. These merchants gain a lot when the fish is resold by weight (Vattamatam, 1978).

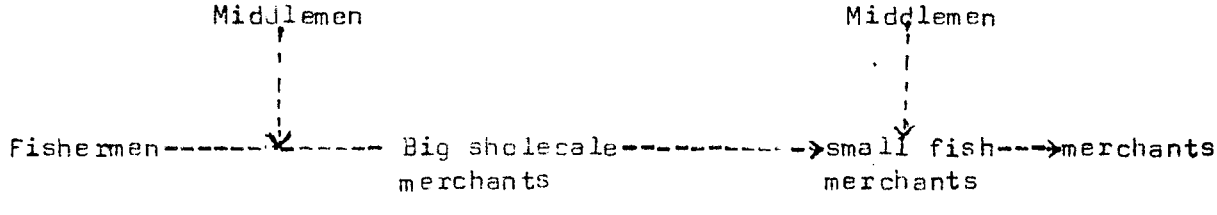
There is a considerable amount of exploitation that takes place in fish marketing, as the merchants, in their own way exploit both fisherman and consumers. In order to understand the nature of this exploitation, it is necessary to have a look at the factors determining fish marketing and

the pattern of the disposal of fish caught by traditional small scale fishermen. According to John Kurien, the following are the factors and the different patterns of marketing. They are (i) the species landed, (ii) accessibility of the sea-shore, (iii) member and type of buyers, (iv) mode of selling, (v) socio-religions customes, (vi) proximity of consumption centred, (vii) fleets and their patterns of operation, (viii) and the organisation of transactions between producers and buyers. The pattern of disposal of fish are divided into three basic forms. These forms are explained as fish-chains - i.e. shematic flow diagrams showing the movement of fish from fishermen to consumers (Kurien, 1978).

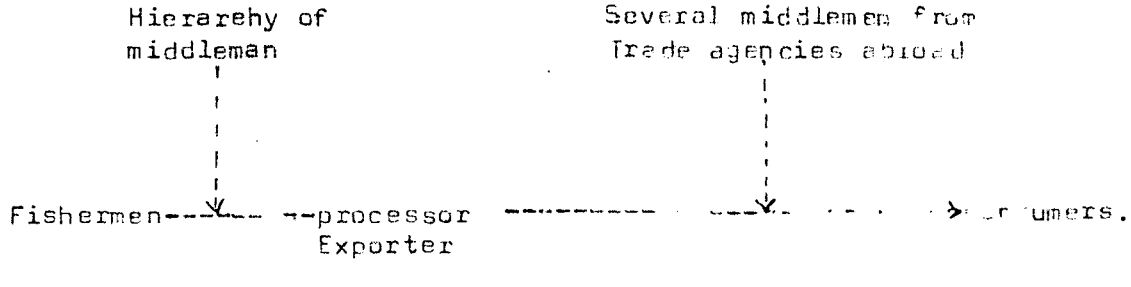
a) Small-scale disposal over short distances



b) Bulk-disposal over long distances



c) Disposal for Export



From these three forms, the following are evolved or derived.

(i) The fishermen have no say in fixing the price for fish.

(ii) The middlemen as auctioners maintain some kind of link with one or other of the merchants.

(iii) There is rigging of the auction - i.e., "The merchant concerned over bids other competitors, but at the actual payment the merchant pays the fishermen concerned either an amount priviously agreed upon or just arbitrarily fixed by him" (Vattamattam, 1978).

(iv) The middlemen/auctionners take fish from the fishermen and cash from the merchant for services rendered.

(v) The fishermen are not always paid their total amount.

(vi) There may be an increase in the production and high demand for fish, but this does not ensure that the merchants pass on this price advantage to the consumers.

(vii) Entry of multinationals in Indian fish economy.

(viii) Above all, "The fishermen, whose labour power/ productiveforce is what really has created the value, is

subjected to a process of systematic deprivation of their right to fair return for their produce " (Kurien, 1978).

These functions are the outcome of the interlocking of credit and marketing relations. The analysis on fish marketing would be incomplete if we do not give due attention to the role of multinationals in this regard. The entry of multinationals in Indian fish economy become prominent with the boom of 'Pink-gold' - Prawans. The crustaceans were never been a profitable commodity. According to Velu Pillai (1940), Prawns cought by fishermen were usually dried and exported to S.E. Countries and during the glut it was used as manure for coconuts. It was an inexpensive item (Kurien, 1985). "It was only with the discovery of the immense profit ooportunities offered by the international markets for crustaceans (prawns, shrimps and lobsters) especially in U.S. and Japan", the prawns became pink-gold (Platteau, 1982). However the marketing of prawns to the capitalist countries especially to U.S.A. was started by a private merchant who was bold enough to export 13 tonnes of frozen penaeid prawns to the U.S.A., (Kurien, 1985) and with this step the marketing of prawns which is the "mainstay of the mechanised fishing industry of India, got its momentum in fish economy. One of the main reasons why the crustaceans occupied a key position in Indian fisheries sector, is that they became the delicious

food in the big hotels in U.S.A. and Japan. But these countries found out that these species of fishes were available in plenty in Indian sea waters, especially in the Kerala region. That is why through the Ingo-Norwegian Project (INP) which was conceived as an avenue for post-war reconstruction and development assistance to the newly independent developing countries, the multinationals could get the support of local merchant capitalists who could convert prawns as a profit making commodity. Naturally, INP had to support these local merchant capitalists because it was they who plunged in to this task initially and proved the worth of prawns and the demand of rich consumers in advanced countries was considered to be a larger and more stable market (Platteau, 1982).

The impact of credit and marketing system in India has created a greater dependancy among the fisherfolk. It is believed that the smaller fishermen community has one of the highest dependancy ratios in the community (Selvaraj, 1975). Thecredit system swallows the surplus income of the fishermen to the benefit of merchant and middlemen, from whom the fishermen of our coastal villages borrow year after and is heavily indebted (Panikkar, 1980). The credit became the

breeding ground for middlemen. The commission agents, who advance large term loans have benefited disproportionately from the prawn boom because, functioning simultaneously as money lenders and auctioneers they exercise control over both production and marketing (Platteau et al, 1981). The entry of big business in the fishing was another consequence of the profit oriented marketing in fish ecunomy. This strenghtened the hands of the local merchant capitalists whose motto is only to make profit by their fraudulent practices. At the local level, the fish marketing process created an element of interdependency as the fisherfolk depends on the neighbouring non-fishing communities for their consumer goods, such as food items, fuel and clothes etc. finally beccuse of the entry of big business into fish marketing process, India's fishing community is experiencing the crisis of polarisation of their socio-economic structure as the traditional fishing sector lost its homogenity as the modern sector became powerful (Shiva and Bandhopadhyay, 1982).

V FISHERIES DEVELOPMENT VS FISHERMEN DEVELOPMENT

The analysis of the process and approach to fisheries development has to be related to the porcess and approach of India's national development. Because we find that fisheries

development does not necessarily mean development of our fishermen, as in our country the growth of development is not always related to the development of poor and the downtrodden. In India, the past three decades have witnessed a growing concern with development. "Various models of development have been developed, planned and implemented in societies across the world. With this, a large number of institutions, centres, schools and departments have mushrromed to provide empirical and theoretical support to different models of development (Srivastava and Tandon, 1982). That is why in the field of fisheries, we have ample numbers of research institutions and training centres which are catering mainly to the needs of the merchant capitalist class in our country who have links with the capitalist countries. However, before we go in to these details, it is necessary to analyse the meaning and relevance of Development approach our country is envisaging. To understand this "we need to examine the social, economic and political processes at work that continue to benefit a few to the disadvantage of the many" and it is said that "the interest in analysing the details of development was as much political as it was an academic matter" (Andrew Webster, 1984). Moreover, in our endeavour to understand India's growth towards development we have to have some idea about the conditions that encourage prosperity and those that work against it, within and outside

our country. Hence we need to understand the social and economic relationships that exist within our country and outside our country as well.

The leaders in independent India wanted to improve the conditions of the rural poor through community development programmes. Hence rural development and agriculture were given main importance. But, unfortunately, the planners and administrators, who were craddled in colonilism failed to understand the social and economic relationship that existed and continue to exist in rural area where "semi-feudal and capitalist model of production are structurally integrated" (Desrocher, 1984). They turned a blind eye to the gulf between the different classes and the hoarding of wealth by a few landlords and industrialists. Without changing thiis structure, they wanted to improve the living standard of poor. Inspite of our nations effort to improve and strengthen the life standard of poor through various development programmes, starting from C.D. programme in 1952 ti IRDP in 1985, we still find that the percentage of our rural poor has been increasing. The actual objective as well as subjective conditions of life and living of the rural poor is visibly worsening at pace faster than the percentages can highlight. It is a trend that cut across continents, cultures and economics. In India as well as other

Asian countries, perhaps the trend is more significant" (Shrivastava and Tandon, 1982). Without making any attempt to critically assess the socio-economic and political forces and conditions which prompted prosperity to a few and poverty to the large sectors of our society, technical models of development is imposed on the people of rural India. Not only the India's agriculture took the path of capitalism (Utsa Patnaik, 1986) but also in other sectors including fisheries, because capitalism is a long run fetter on the overall growth of the economy of a nation. Thus the overall Indian economy is integrated with world capitalism (Desrochers, 1984).

The conditions that encourage prosperity and those which work against it lie in India's ties with the first World countries. Immediately after obtaining freedom from the bondage of colonialism, the planners believed that only the rich nations could bring selvation to India. During the last 37 years, the Indian capitalist class has increased its assets, turnover and profits and accumlated more surplus, the monoply strata of the Indian capitalist class have shown new keeness for foreign colleborations and investments. The monopoly capitalist class wants to push foreign collaborations further, and invite foreign capitalists who are wiling to exploit the Indian market in collaboration with the local

capitalists (Bhambhri, 1984). Despite the country's professed intentions of dismantling the structures of feudalism and colonialism grafted in to its socio-cultural fabric and its economic and administrative pattern, there are unmistakable traces of feudal past and colonail heritage in India after 37 years of independence (Dube, 1984).

As a result all the policies, plans and programmes were based on the policies and plans that are followed in capitalist countries. In any country, the implementation of the programme involves political decision and depends on the class from which these politicians hail. Naturally in a country, where the capitalist class dominates the whole administration their first and foremost interest will be to suit the development programmes according to the needs of the class which promotes their prosperity and power in return. Such a class will have a vital link with the capitalist countries. Therefore, in most of the third would countries "all the national plans for improving rural and industrial sectors of the economy are usually strongly influenced by the international aid and commercial banking agencies that provide capital, technology and know-how for long term development programmes (Webster, 1984).

It is against this background that the meaning of development has to be understood. There may be highly resounding developmental plans. But it must be kept in mind that which sections of our society they are aimed at. When we speak of development it is not the development of things but of human beings (Jha, 1986). If we are talking of the development of the poor and the underprivileged, we must know what does development mean to them. Do they think that the development programmes give them an opportunity to meet their minimum basic needs? Do they think that their deplorable and miserable human existence is because of the inequality in the distribution of wealth and resources ? Can our development programmes give an awareness and awakening to this section of our society ? The people who deserve to be developed can not be developed if they are not given an opportunity to think that their lives depends very much on the resources they can command and own with equality of opportunity the commodities that they produce.

Six five year periods have passed and now we are in the seventh plan period. Through our five year plans, many development programmes have been planned and implemented, yet, today "the Indian economy and the state face a serious crisis. There are omnious signs that the country has almost reached a

dead lock : the overall declaration of the economy after the mid 1960's, the staggering magnitude of the poor, the already scandalous, but still increasing inequalities; the growing dissatisfaction of the masses of the one hand, and the increasing authoritarianism and brutal appression on the other (Desrochers, 1984). But on the other hand, according to the yeard stick we use to measure our economic growth and development i.e. the G.N.P. there is growth in our economy. But this GNP has certain pitfalls as it does not measure items that are important to welfare in most societies, such as the distribution of income and wealth, employment status, job security and opportunity for advancement (and the) availability of health and education services (Webster, 1984). The GNP does not say anything about which sections of our society enjoy more of the profit and how it is distributed. One of the major strategies adopted to raise the living standard of the rural poor is MNP in five year plans, (5,6 and 7th). But the M.N.P. is an earlier that is thrown to the rural poor from the total resources of our nation and we see in the budget, the allocations for M.N.P. is very dismal and dormant compared to the percentage of share given to other sectors. Even though this programme aimed at the welfare of the weaker sections mainly in the backword areas, the benefits accrued mainly to the large and middle farmers who sub-divided their cultiviable holdings amongs the family members and thus became eligible for facilities under this scheme (Imtiaz, 1985). The M.N.P. and other programme cannot do anything better to the rural mass, unless there is a desire for social justice and the recognition of the necessary

condition that the material resources of a society should be distributed more evently thoughout the population.

"It is widely recognized that development is not simply a matter of introducing technical improvements however appropriate they may appear to be. What is more important is for people to be critically aware of their own situation and whenever necessary to be ready to change it" (Kamala, 1982). Development is not principally technological progress or economic growth but change in the people and their organisation as a process of change (Fernandez, 1985). It is the liberation of the oppressed that is to be the main objective of development and those who proclaim devotion to the cause of liberation yet is unable to enter in to communion with the oppressed are greviously self-decieved (Freire, 1972). Development is the process of improving the living standard of human beings by understainding the negetive and positive socio-economic and political forces that hamper and activate human growth and well-being respectively, with the provision of infrastructural facilities with equality of opportunity, to the oppressed and exploited masses, with their effective/active participation so that they become aware of the various unbriddled forces that hinder their growth and well-being and to take effective and immediate measures to fight against their socio-economic and political exploitation. The development must aim at safe-guarding the productive capacity of the people. Development means ensuring equity of distribution

and active participation of all in the community in the process and its general welfare (Fernando, 1979).

In India's fish economy, there is a dichotomy between the development of fisheries and the development of fisherman, as the development of fishermen always means development of fisheries research and training institutions. Even the allottment in the budget for fisheries development is very meagre. This is given in the following table No. XIV.

During the sixth five year plan period, the main thrust in the fisheries was to increase production through fish culture, deep-sea fishing with special reference to management of the Exclusive Economic Zone and diversification of fishing with emphasis on conservation of heavily exploited marine fishery resources on the one hand and the exploitation of new resources on the other. Protecting and promoting the interests of small fishermen by democrating fishing zones and by developmental measures is one of the main planks of fisheries policy (7 AO, 1982). Thus we find that the main objective is the increase of fish production. The strategies adopted for the increase of fish production are (i) fish culture, (ii) deep-sea fishing, (iii) conservation of already heavily exploited marine fishing, (iv) exploitation of new resources, (v) use of modern technology and hence technical cooperation with

TABLE XIV

Analysis of Investment in various five year plans. (Rs. in crores)

Five year plans	Total outlay	Total outlay for agriculture and allied sectors.	Total outlay for fisheries	Percentages of Fisheries outlay to	
				Total outlay	Total outlay for agriculture and allied sectors
First Plan	1,960	294	5.13	0.26	1.76
Second Plan	4,600	529	12.26	0.27	2.32
Third Plan	7,500	1,068	28.27	0.38	2.65
Fourth Plan	5,902	2,728	82.68	0.58	3.03
Fifth Plan	39,322	4,302	151.24	0.38	3.51
Sixth Plan	97,500	6,609	371.14	0.38	5.62

Source: Fisheries Division, Ministry of Agriculture.

developed and developing countries. The benefits of the deep-sea fishing is enjoyed by the multinationals and the merchant capitalists in India. The depletion of resources in the marine fishing is authentic and obvious. Even though the overall policy in fisheries is one of promoting growth and stability and the formulation of policies and priorities linked with the broad objectives of national development plans, we do not find any improvement in the living standard of fishermen (Silas, 1977).

USE OF MODERN TECHNOLOGY IN FISHING AND THE IMPACT

In order to understand the dichatomy between fisheries development and fishermen development, the use of modern technology is very important as technology is one of the main factors determining the well-being of fishermen. In this analysis, the following aspects are given due importance viz., (1) concept of modernisation, (2) the concept of technology, (3) artisanel fishing, (4) Modern fishing, (5) The political economy of foreign Aid, (6) The impact of mechanization.

(1) Modernization The concept 'modernization' seeks to describe the period of transition of human society during which man enters a modernational phase of acquiring skills and reaches a new level of mastery over nature to construct his own social

environment based on affluence and rationality (Desai, 1975). Theoretically speaking, the term modernization can not be defined in simple terms as it encompases psycho-social and economic features including references to value systems, individual motivation and capital accumulation etc. The mere use of new technological advancements may not be essential to modernization. Modernization is a 'universal - cultural' phenomenon and hence what may be essential to modernization is the internalization of humanistic and philosophical view-point of science and technology on contemporary problems (Singh, 1977). An analysis of the different theories by Emile Durkheim Max Weber, Talcot Parsons, McClelland and Hagen, erner and W.W. Rostow give greatest priority to the role played by the values, norms and beliefs of people in determining the sort of society - traditional or modern - that they create. Thus value changes are considered as the most important conditions for social change in such theories. One of the main features of modernization is that there is a 'transition from the use of human and animal power to inanimate power, from tools to machines as the basis of production and its implications in terms of the growth of wealth technical diversification, differentation and specialization leading to a novel type of division of labour" (Desai 1975). However, it should be kept in mind that it is a value loaded concept.

The features of modernization have deep bearing on the modernization of fish economy, because, the traditional fishermen are always referred to as resisting to modern technology. If modernization implies that value changes are the values cherished by the traditional fishermen. Their values are related to the natural conditions and surroundings in which they live. Based on these, they have evolved a technology (artisanal) which is most suitable to their way of fishing operation. Naturally there will be resistance from these fishermen to any alien technology if it disturbs their normal way of functioning. The forces of modernization not only has created conflict between guardians of tradition and those who seek change but also made the people subservient and slaves to technology. In a given society there may be so many underlying factors which drives people to behave in a particulars way, but this is not usually taken in to consideration when a new technology is being introduced. Another important factor, perhaps the sole feature of modernization, in todays context, is the role of developed countries. It is the most developed and advanced countries, for their prosperity, exploit the developing countries in the name of modernization since historically modernization is the process of change towards those types of social-economic and political systems that have developed in western Europe from the 17th to 19th centuries and it is these forces and pressures that are

built up gradully within western societies, that pull the developing countries towards modernity so that the former's ideas and technologies can be introduced and diffused throughout the latter countries (Webster, 1984). Yet another important feature of modernization is the role played by certain sections of the society in the developing countries who have a vested interest in the process of engineered change so that they can accrue all the benefits.

2. TECHNOLOGY

In India the modern technologies are mostly borrowed and invited from the west and they are chosen under the compulsion of foreign collaboration. This is true not only in industrial sector (Bharadwaj, 1980) but also in the fisheries sector. Though modernization and technologies can not be equated, the interlinkages that exist between them can not be avoided as the latter plays a key role in the process of modernization. The main feature of technology is the application of scientific method. The effect of technology are the changes in the patterns of supply (prodiding on abundance of manufactured goods); the change in the character of labour and the change in the nature of culture (which itself becomes saturated with the symbols of technology (Sernton, 1982). In fish economy, the artisanal fishermen apply

considerable amount of scientific methods as "they have accumulated knowledge about fish, fish habits, waves, currents and stars handed down from generation to generation. (Kurien, 1976). Hence to categorise traditional fishing as unscientific is unethical and unscientific. (In the later part of analysis we will see how the traditional fishing is more productive and viable compared to the modern fishing). In the name of introducing new technology from western countries, the traditional skills and institutions had a further set back in the onslaught by the foreign industry, foreign rule and collaboration of professional elite. The new system had no indegenous roots" (Rao and Chaubey, 1982). It is true in the case of fish economy too. The tendency to adopt modern technology is increasing day by day in India, and more so in the present political structure where a policy of liberalised economy is encouraged. But the question of appropriate and relevant technology is not given much wright. In such a policy of liberalised economy the capitalist path of development is given the free hand and in the fishery sector it has already set in.

3. Artisanal Fishing

Technology plays a vital role in artisanal fishing. The evolution and adoption of the technology used in this

sector is important to understand the traditional fishing. Kurien, while analysing the evolution of traditional fishing says that it is partly conditioned by the physical geography of the coast and partly by the nature of the resource base which conditions the material forms of organization of production in fish economy. That is why we have dugout canoes for calm sea waters, driftnets for demersal species; and hooks and lines for deep water fishing . The Table XV give the craft-gear combinations and the species of fish cought by the different type of craft-gear combinations in different seasons. "The most distinctive feature of artisonal fishing technology of craft-gear design in the country shows a remarkable element of the exotic." (Kurien, 1985). The differnt types of crafts and gears used in artisonal fishing are given below :-

) Catamarans : The word is derived from the Tamil word "Kattumaram" which aptly describes the nature of the craft. It is basically crude raft made by tying 3 to 5 logs of soft wood together securely at the two ends with the coir ropes tied around with two cross pieces cut in the shape of stumped bull's horns. The 'Catamarans' are classified according to the number of persons they can carry. Even though a cattamaran can not provide the minimum protection to its occupants from the waves and the winds, it is unsinkable, can be launched from

TABLE-XV

Expectations about seasons of operation and main specieis of fish caught by the type of craft-gear combination.

S.No.	Craft-gear combination	April	May	June	July	August	September	October	November	December	January	February	March	Main species caught
1.	Encircling net-canoe													Sardine, Mackerels, Prawns
2.	Boat Seine-dugout canoe													Sardines, Mackerels
3.	Boat seine-catamaran													Ribbon fish, Anchovies
4.	Cotton shore-Seines Plank canoe													Anchovies, Ribbon fish, Seades
5.	Nylon shore seines, Plank													Sardines, Anchovies, Seades
6.	Small mesh drugnet-Plank canoe													Sardines, Mackerels
7.	Large merge and ribnet dugout C.													Tunnies, Searfish
8.	-do- Catamaran													Tunnies, Searfish Caranx
9.	Anchovies net catamaran													Anchovies
10.	Prawn net catamaran													Prawns, Seiaends, Lactarius
11.	Sardine net catamaran													Sardines
12.	Prawn net dugout canoe													Sciaenids Lactarius
13.	Sardine net dugout canoe													Sardines
14.	Cast net dugout dance													Sardines Mackerels
15.	Lobster net dugout canoe													Lobsters
16.	Hock Line Plank canoe													Shark, Rays, Perches, Cat Fish
17.	Hock line dugout Canoe													Shark, Rays, Perches, Cat Fish
18.	Hock line catamaran													Tunnies, Shark, Searfish, Cuttle Fish
19.	Trawlnet mechanised boat													Prawns, Perches, Sc. Cat fish
20.	Large mesh drift net.													Caranx

Source: "Economies of Artisanal and Mechanised Fisheries in Kerala, Kurien and Willmann FAO/UNDP, Madras, 1982.

any point on the coast, at any season of the year and once it is across the surf, it proves an excellent and fast sailing craft. It is light and uses a triangular shaped rail, the base of which is attached to a pole which is often longer than the craft itself. The Catamaran can be used in pairs to operate board services or individually to operate gill nets, drift-nets and hook and line sets.

2. 'Dug-out canoes' : The dug out canoes as the name implies, are made by scooping out the wood from a single log of mangoes or jungle teak. The heel portion is left thicker than the side. Often it is not possible to get the total symmetrical shape from the log and the 'patches' have to be parralled with planks of teak wood rivetted on to the main body with nails. The drug-outs are of three sizes, the large ones of over 10 metre length are called odam or 'Vanchi', the medium sized ones called 'Thonies' measure about 9 mts;, and the beputhoni which is about 8 metre long is the smallest type. The odams carry a crew of 7 to 11 fishermen and the thonies from 3 to 6.

3. Plank-built canoes : These canoes are made by building a body of wooden planks with or without ribs on the inside. The wooden planks are reamed together with coir rope and the craft is made watertight by applying layer of pitch on the inside.

They are of two sizes, both called 'Vallams', one about 11-12 mts. long, 1-0, 1-5m vide and 0-6 mt deep. Their displacement varies between 3 to 5 tonnes. The large one's are capable of carrying 9-11 persons and the smaller ones 3 to 6. The canoes also have no rudders and use paddles, sails are used only occasionally.

Even though the following gears are used in artisanal, some of them are used in modern fishing too.

(a) Encircling net : are close meshed nets of nylon yarn used in fishing fast moving delegic, shoaling type of fishes like Sardine and mackeral. They are operated in water depths of 6-10 mts.

(b) Boat-Seines: are nets of cotton or nylon with a bag like shape and long wings of rope or netting attached to the sides. They are generally operated from two crafts each craft handling the hauling ropes attached to one or other of the wings. In the coast of Kanyakumari and Kerela it is called "Jhattumadi" which is used primarily to catch ribbon fish, anchovies, carangile etc.

(c) Shore Seines: or beach-seines are bay - like nets either rectangular or hemispherical in shape, made of cotton or nylon,

with long coir ropes and webbing attached on two opposite sides. The most commonly caught species include anchovies tunnies, carangids, pomfrets, sardines and mackerels.

(d) Gill nets: are a broad genetic name for nets which are well like nature and in which fish get caught when their gills get entangled in the meshes. The mesh size is chosen to suit the size and species of fish which it is intended to catch. Gill nets are made of cotton and nylon. These are of mainly four types viz. (i) 'Drift-nets, (ii) 'Set-Gill nets' (iii) 'cast-nets' and (iv) Bottom-set lobsters nets.

(e) Hook and Line : Commonly called 'ehoondayan-kangoose' consist of iron or aluminium hooks attached to droppers or snoods of nylon/cotton cord, which are fastened at internal to one long nylon/cotton line which has attached to it, at one end, iron or stone weights. The size of the hooks and the thickness of the line used varies according to the species of fish to be caught. The most commonly caught species include tunnies, catfish rockeod, shark and rayfish.

(f) Trawl net : The bottom trawl is a conical shaped net towed over the sea- bed. On the wings of the trawl net, rectangular loads called other boards are attached to weigh the whole net down to the bottom and maintain the lateral opening. The vertical opening is maintained by floats. Bottom other

trawling is restricted to the mechanised sector. These nets are made of polythene yarn. The bottom trawl is used to catch prawns and demershal fish.

4. Modern Fishing

The modern fishing was introduced in India in the early fifties with the advent of Indo-Norwegian Project. The modern fishing is done mainly by mechanised boats which are of three types namely a) gill netters, (b) purse seiners, and c) trawlers. However, the trawlers and the trawling has to be explained as it has wide ranging implications for the Indian fish economy.

"The impact of trawling and purse-seing on the variety and quantity of fish catches was felt most harshly during the late seventies. Trawling, a spin-off from World War-II methods for removing mines, serapes the sea-bed and savagely attacks life and life supporting systems there. All foliage and rocky formations, sand towers and coral formations - which inculcate fish eggs and protect juvenile fish besides storing sun light important for inshore fish - are in effect destroyed by the Trawl nets" (Kurien, 1985). Ironically trawling was banned in Norway in 1952 and in Phillipines in 1976. This is the paradox of technical cooperation between developed and

developing countries. It assumes that a technology that is destructive in a developed country is constructive in a developing country and thus becoming a destructive force to the latter. Of course, the eyes of the ruling class is still closed today.

5. The Political Economy of Foreign Aid

Before we go into the process and the impact of mechanization of fish economy, we must understand the political economy of foreign aid in the name of technical cooperation and development. In general term, foreign aid is considered to be a concessionary transfer of public resources including gifts, grants liberal short-term and long-term loans as well as technical assistance, capital goods and foreign exchange credits, from the developed countries to the developing countries for the latter's economic development" (Banerjee, 1977). The economic rationale for development is that the receiving countries lack sufficient domestic capital for "take_off" into development as Rostow's model of the stages of economic growth suggests that a "pre-condition for take-off is an adequate level of capital investment" (Navarro, 1980) when an aid is given on this economic rationale, the receiving countries are bound to face the following problems according to Andrew Webster.

1) The poorer/receiving countries may find themselves getting into increasing debts, since the aid is given in the form of loans;

2) Most portion of the aid is swallowed up in payments to technical experts and the field staff of the donor countries and the receiving countries.

3) Most of the aid given to the developing countries is the surplus from the developed countries, for instance, US's supply of wheat to developing countries. What was to be wasted in a developed country is given as an aid to developing country with a repayable loan at a concessional rate of interest.

4) The receiving countries are made dependent on the donor countries and this 'aid-tying' mechanism forces the developing countries to buy the products from the developed countries who find a good market for their products in the former.

5) The kind of people in the developing countries who benefit from the aid are the bureaucrates, entrepreneurs and politicians. Foreign aid, whether in the form of loan or technical assistance is a expansion of capitalism as it is based on the purpose of profitability, competition, dependency and marketing. In India,

especially in the field of health and medicine, the "increasing commercialization of western medicine, which is often followed with increased sophistication and super-specialisation, with a corresponding increase in the dependence of the ruling classes of most third world countries on 'experts' from other industrialised countries" (. Banerjee, 1985), is another instance of this glaring situation. The foreign aid to the developing countries is determined by the 'profit motive' of the developed countries, who find easy access and entry point to the developing countries for their own economic growth and development. It is not only true in the case of technical cooperation between a developed and a developing country, but it is also true of the technical cooperation between developing countries, even though they say in principle that there is a "deliberate and voluntary sharing or exchange of technical resources, skills and capabilities between them for their individual and mutual development"(Nicholos E.A., 1981). Thus the aid given by a developed country to a developing country is a mechanism used by the former to exploit the latter and to create a dependency of the latter to the former.

6) Impact of Mechanization : As mentioned earlier, the mechanization of fishing in our country was initiated

through the introduction of Indo-Norvegian Project (INP) which was the world's first technical assistance project of its type undertaken between a developed and a developing country" (Kurien, 1985). The INP was started in 1952 and it was implemented first in Kerala. It was a tripartite agreement between U.N., the Govt. of India and the government of Norway. It was the UN's inspiration to provide technical assistance to the developing countries and it was an attempt to transfer resource and knowledge.

The rationale behind this Project was that the artisanal fishermen lacked technical knowledge in fishing and the resources in the sea are not exploited fully due to lack of mechanized way of fishing. It was said that the main objective of this project was to "raise the productivity of fishermen and improve their standard of living" (Vijayan, 1985). The other objectives included were, to have an increase in the return of fishermen's activity, to have an efficient distribution of fresh fish and improvement of fish products and to improve the health and sanitary conditions of the fishing population. The main functions of the projects were the introduction of a new small boat with sufficient engine power using the shrimp trawl net as its main gear and the provision of additional infrastructural facilities such as ice plants,

freezing and processing technology to cope with the increased production and thus further improve the exports.

Initially, according to John Kurien, this Project had a launching problem because the Norwegians were not sound in the knowledge of the undeveloped countries and they comprehended very little about the problems and needs of development in India, the social, cultural, economic structures through which development was to be achieved. Another drawback was their inability to mechanize the traditional crafts which was the main component of INP. Norwegians also could not understand the forces that were operating in the traditional fishing communities which were completely under the control of local middlemen and fish merchants. However, the Norwegians were able to introduce trawlers and purse seiners and the Indian Government remained cool and neutral. Kurien summarises INP in the following ways:

1. There was a 'drifting without direction" as the new mechanized boats, nylon nets were introduced instead of mechanising the traditional crafts.

2. The penaeid prawns become a export commodity and as a result in sixtees, the INP's approach was export-oriented. This approach resulted in the creation of a new class of more powerful merchant capitalists who were assisted by INP.

3. The period between 1960-63 were marked with success as INP could exploit the unexploited marine resources in Kerala. But this resulted in the death knell of fisheries development as the fishermen were pushed to the realm of poverty and misery whereas the new class of "non-operating enterpreneurs or capitalists" who owned the means of production profited more.

4. This merchant class also brought migrant lebour force recruited from outside the INP area.

5. The realm of the export business came to be largely concentrated in the hands of the private sector. This was the strategy most suited to the new segment of the merchant class in the fisheries sector.

6. The seventees and the early eighties of INP were marked by growth and stagnation. There was growth in the mechanised boats and processing facilities but there is a stagnation in the production as compared to past.

The impact of mechanization of fishing in India has devastatin, effect on the life of traditional fishermen. The depletion of resources created by trawling has made the life of fishermen more miserable. Eventhough the contribution from the artisanal sector is more than the mechanised sector, inspite of mechanisation, the former is considered as less productive. The INP has widened the gap of technological polarisation. A constant conflict between

the traditional and modern sector is created as the mechanized boats encroaches the traditional waters. The fish economy is engulfed by the capitalists forces of development (Kurien, 1985) as there is an emergence of a new class of merchants. The ecological damage created by the mechanized sector, has jeopordized the future of the whole sector. The traditional fishermen, who once thought of marine resources as inexhaustible, are encountered by the fact that the marine resource is depleting. Their welfare oriented fish marketing has become profit oriented and commercialised. The control and power exercised by the local merchants and middlemen have increased and as a result the fishermen are not in a position to enjoy what they produce. The social and the economic knot that was existing in the traditional sector is thoroughly disturbed and broken. They are facing a conflict in their values and cultures as their knowledge and skills in fishing is challenged by the mechanised sector. The human resources represented by the industrious, knowledgeable and skilled artisanal fisher people are being simply discounted and allowed to rapidly waste away (Iyengar, 1985). There is a remarkable deterioration in the consumption of fish by fishermen because of the high demand from the foreign countries and the increase of price for fish and other dependency on the market for the security of basic consumable goods. Fishermen usually take enough fish for consumption only when they have a heavy catch.

But, now, due to depletion of marine resources their catch is very little and hence they cannot afford to take enough fish for their consumption. The blue revolution also brought a revolution in the minds of the artisanal fishermen who have realised the fact that the capitalist path of development in fishery sector is the cause for their misery. Especially in Kerala, the fisher people'sm movement is fast growing under the leadership of radical clergy and the leftists. In the name of blue revolution, there are new market incentives offered by a booming international demand for erusfacean products (Platteau) which has resulted in the decline of desire and interest of the part of the fishermen to go for catching other species of fish- mechanization has led to the growth of capital accumulation in fish economy, which, instead of raising the living standard of fishermen, has raised the living standard of a few merchants class who continue to have full control over the means of production and marketing in fish economy.

One of the objectives of INP was to improve the health conditions of fishermen. Various studies conducted in Kerala coast reveal that 60% of the children suffered from T.B., high incidence of chronic, heart, kidney and other congenital disease among children and high rate of infant mortality (Iyengar, 1985) in fishing communities. There is more than

70% of illiteracy prevailing in fishing communities. In the recent past there was a move to mechanise the traditional crafts with the help of outboard engines. These engines were brought mainly from Japan (Yamaha). But the Indian administrators in the fishery sectors did not take note of the Japanese market strategies i.e. the cost of the whole product is relatively cheap and the spare parts cost very high. Hence, after buying the outboard engines, the fishermen had to pay a heavy price for the spare parts and there were hardly any workshops to cater to the repair of these motors. Hence the fishermen who used these outboard engines have to undergo a irrecoverable loss of fishing time (Iyengar, 1985). Because of mechanisation, the traditional fishing communities once self-sufficient, are undergoing a transition from equitable sharing to capital accumulation. The socially and ecologically inappropriate technological innovation (Ruddle, 1983) has led to the formation of class conflicts among fishermen i.e. between the traditional and modern fishermen. The modern fisheries because of their use of trawlers and purse-seines in the near shore areas, has caused serious damage to the economy of fishermen, particularly of those dependent for their livelihood on shore based operation. As a result, the catamaran fishermen and the mechanized boat owners

have been in a state of confrontation for the past few years. (Tandel). Inspite of mechanization, the artisanal fishing contributes 65% of the total marine catch in India. But this sector is likely to wither out in course of time in view of the competition it is facing from the organised sector, if this sector is not able to fish in the traditional zone without competition from the powered boats (Bagat & Kurien, 1981).

The impact of mechanization has deprived the right of artisanal fishermen who have no say in the path of fisheries development as they have to completely depend on the local middlemen and fish merchants who in turn satisfy the need of the merchant capitalist class. The mechanization has strengthened and paved the way for the emergence of capitalism in India's fish economy. Even the efforts to organise the fishermen under cooperative have failed and it is manipulated by the merchant capitalists. It is not only in the case of artisanal sector, but also in the case of mechanised sector. The efforts to promote mechanised fishing through cooperatives, which put the fishermen under several technological and institutional constraints failed to produce any significant impact among them (Abdul Hakkim, 1980). In many respects, the impact of mechanization of fishing in India is, therefore, the history of capitalist development in a nutshell and the process is not yet complete.

C O N C L U S I O N

Since the development of Indian fisheries sector is following the path of capitalism, it is our concern to see the implications and intimidations of modernization of fish economy. Hence the issues that emerge from the review of available studies are - (i) if the Indian fish economy is following the patterns of capitalism, what benefit the fishermen are going to get from this; (ii) which sectors of the fisherfolk are benefitted; (iii) what impact it has made on the well-being of fishermen and (iv) how the entire economy is monopolised by a few multinationals abroad and the merchant capitalist class in India through various mechanisms and finally if we believe that the best way to improve well-being of fishermen in our country is to extricate ourselves from the grasp of western models, techniques and institutions (Susan, George, 1979) what type of development strategies our country should follow not only in fisheries sector but in all the sectors as a whole ?

CHAPTER-III

CONCEPTUAL AND METHODOLOGICAL APPROACH

CHAPTER-III

CONCEPTUAL AND METHODOLOGICAL APPROACH

In fish economy, it is possible to identify three different classes - the producers (Artisanal and modern fishermen); the merchants-cum money lenders who are involved in marketing fish and the middlemen-cum-money lenders. The relationship and interaction between these classes of people who are directly or indirectly involved in the productive process is taken as production relations in fish economy. This production relations can be considered as responsible for the well-being of fishermen who act upon nature with the available technology and within the existing social relations to produce material basis and create conditions of well-being.

Concretely, we consider well-being in relation to the basic needs such as food, shelter and clothing and other needs - nutrition, health, education and related services, the availability of and accessibility to various services provided by the government and other agencies and finally the efforts and measures taken by the people in order to meet their basic needs.

Objectives

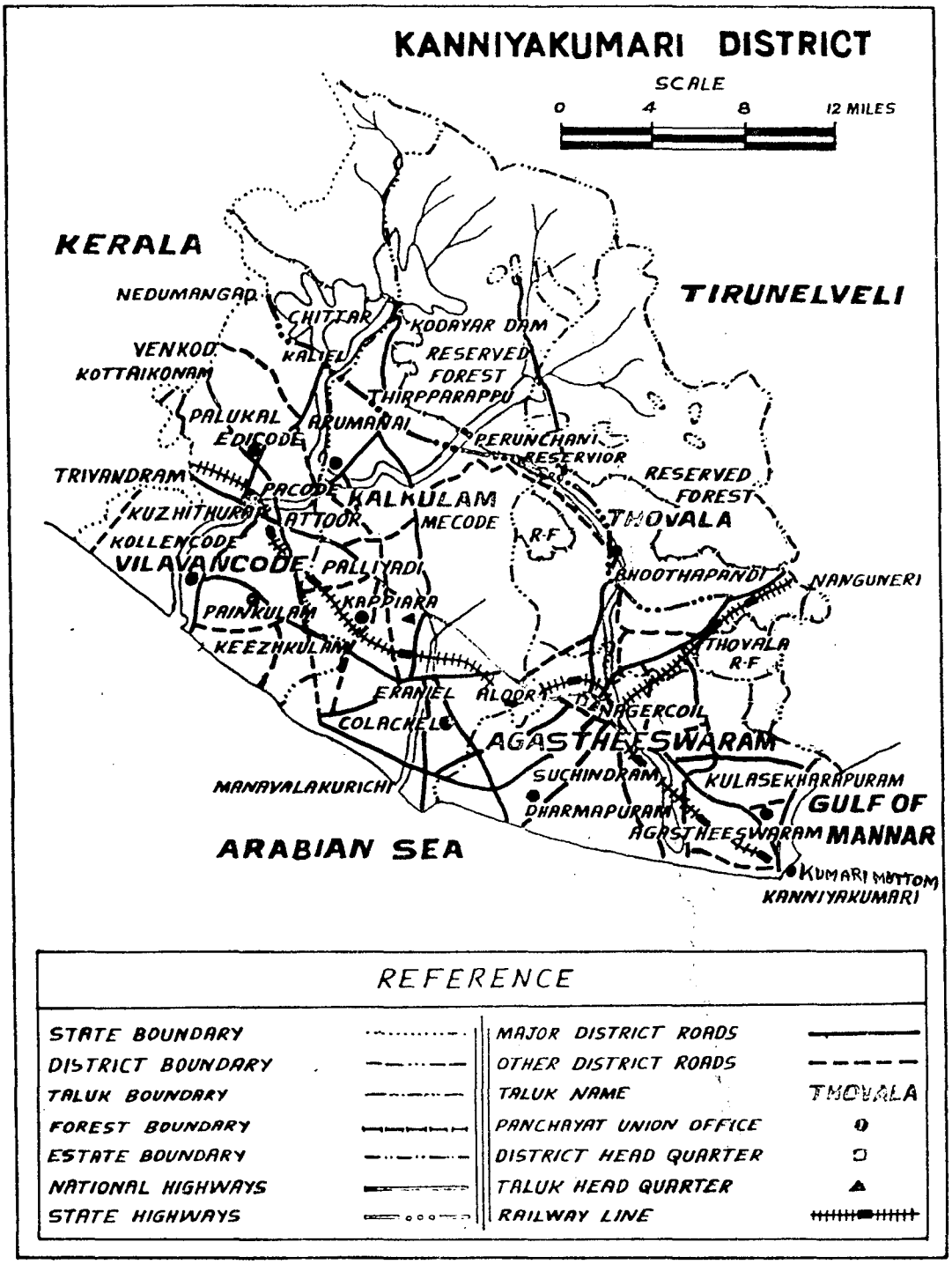
Following this conceptual framework, the main objective of this study is derived i.e. to analyse the production

relation in fish economy and its impact on the well-being of fishermen. With this broad objective in mind an attempt is being made to study the following aspects.

1. The ownership pattern in fishing communities.
2. The credit system
3. The marketing system
4. The technology and fishing patterns
5. The consumption patterns.
6. The housing, environment, sanitation and water supply.
7. The levels of education
8. The health condition and health behaviour
9. The role of government and voluntary organizations and
10. the people's awareness of the existing conditions and the measures taken by them.

Field of Study

The study on "Modernization of Fish Economy and its Impact on the Well-being of Fishermen - A case study" is conducted in a village called Kumari Muttom (locally called as Chinna Muttom). It is situated three kilometres towards the north-eastern side of Capecomerin. The location of the study village is indicated in the map. The total population of this village is about 1550. The village is one of the ancient Christian villages. Frequently mentioned in recent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RESERVED FOREST
THIRPPARAPPU
PALUKAL
ARUMANAI
EDICODE
PERUNCHANI RESERVIOR
TRIVANDRAM
PACODE
KALKULAM
RESERVED FOREST
KUZHITHURAI
ATTOOR
MECODE
THOVALA
R.F
KOLLENCODE
VILAVANCODE
PALLIYADI
NANGUNERI
KAPPIARA
PAINKULAM
KEEZHKULAM
THOVALA R.F
ERAMEL
ALOOR
NAGERCOIL
COLACHEL
AGASTHEESWARAM
SUCHINDRAM
KULASEKHARAPURAM
MANAVALAKURICHI
GULF OF MANNAR
DHARMAPURAM
AGASTHEESWARAM
ARABIAN SEA
KUMARI MUTTOM
KANNIYAKUMARI
REFERENCE
STATE BOUNDARY
DISTRICT BOUNDARY
TALUK BOUNDARY
FOREST BOUNDARY
ESTATE BOUNDARY
NATIONAL HIGHWAYS
STATE HIGHWAYS
MAJOR DISTRICT ROADS
OTHER DISTRICT ROADS
TALUK NAME
THOVALA
PANCHAYAT UNION OFFICE
DISTRICT HEAD QUARTER
TALUK HEAD QUARTER
RAILWAY LINE

books of Indian Church history and much discussed among historians is the church of St. Thomas (Thomas Pillai) at Kumarimuttom. In the writings of Duarta Barbosa who came to India around 1500 A.D., it is seen that there is a mention about this old church which was founded by Armenians. All voyages used to pay tribute to this church and Portuguse used to offer Mass whenever they passed through this village (Narchisan, 1983). From this we understand that this village was once a port. Now the Tamilnadu Government is building a fishing harbour in this area at the cost of Rs.7.6 crores under the Fishing Harbour Project Circle Scheme.

According to the two stone inscriptions dated 1494 A.D. and 1526 A.D., it is learnt that the king of Travancore granted tax exemptions to the residence of Kumari Muttom and authorising the levy of a cess from the fishermen and on the transport boards that passed the Kovai Kulam Haven (Kovalam) in Kumari Muttom, carrying paddy and other cargo to and fro along the coast. Thus, this village had income from the export which was mainly used for the church activities. The original fishermen in this village were known as Paravas. The Mukkuvas from other villages started settling in this village only three centuries ago. Therefore, we have, now two castes namely the Paravas and the Mukkuvas who are the inhabitants of this village (Narchisan, 1983).

The reasons for choosing this village for this study are the following :

(i) The fishermen in Kanyakumari district belong to two castes namely Paravas and Mukkuvas. But they are not staying together in all the villages except in three villages including Kumari Muttom. By selecting this village, it is possible to study both the communities.

(ii) In this village both the artisanal fishing crafts and gears and mechanised crafts and gears are used for fishing.

(iii) The Tamilnadu Government is building a fishing harbour near this village. Therefore, the problems faced by the fishermen due to this harbour could be studied.

(iv) There are a few voluntary organizations in promoting the well-being of the fishermen of this village.

Selection of Samples

There are 227 households in this village. The sample is selected only from the three categories of people who are involved in fish economy. They are the artisanal and modern fishermen, the merchants-cum-money lenders and the middlemen-cum-money lenders. In this village there are 129 artisanal fishermen families. Since it is a small number, all the 129 families are selected. There are 22 households owning

mechanised fishing crafts and gears. Out of the 22 households, 15 are selected on the basis that they have been operating the mechanised boats for more than five years. There are five fish merchants who operate simultaneously as money lenders too. All the five are selected and the middlemen being three in number all of them are selected for this study. Hence, the sampling is Census sampling in general.

Besides this sample, 24 fishermen families are choosen from another village where a voluntary organization is involved in the promotion of well-being of fishermen. This organization had helped to start a "Fishermen Sangam" (Federation), in order to relieve the artisanal fishermen from the clutches of middlemen and merchants. There are 42 families who are the members of the Sangam. Out of this only 24 families are selected on the basis that they have been the members of the Sangam for atleast three years. These respondents are selected in order to look into the need and importance of fishermen Sangam in promoting the well-being of fishermen. Even though an indepth study is not conducted in this village, as compared to the study village, the roles and functions of fishermen sangam is studied in full detail. The data collected on this aspects is used only for discussing the results of the main study.

Tools of Data Collection

The structure and the nature of any study is influenced by the tools administered for collecting data. The validity of the study, to a large extent, depends on the tools administered. Hence in this study the following tools are carefully selected to collect the data. The purposes of selecting each tool are given below:

a) Interview Schedule

Considering the literacy level of fishermen and their ability to comprehend and disseminate their problems, a carefully tested interview schedule was administered. The schedule is used for each category of samples for the purpose of collecting data on the general socio-economic conditions, the ownership pattern, the credit system, the marketing system, the type of technology used, the housing, water supply and environmental sanitation, the educational level, the awareness on the government programmes, health behaviour and the health conditions of this village. Among the questions in the schedule some are open ended and some are structured. Infact, the interview schedule is the main tool used in this study.

b) Observation Technique

Observation technique is essential in research because certain types of data cannot be collected by Interview Schedule

alone. It also helps the researcher to establish good rapport with the community, if it is done without giving any room for suspicion, to the community. Keeping these aspects in mind, the observation technique is used to collect data on the sale of fish on the beach, measurement of shrimps by the merchants-cum-money lenders, the nature of auctioning, village meetings and festivals, the general environmental and sanitary conditions, the regularity of water supply, the functioning of village school, spending of leisure time and the functioning of different programmes of the voluntary organizations.

c) Informal Interviews

The researcher, in order to familiarise himself with the village leaders and youth and to collect qualitative data, few informal interviews are conducted. The persons interviewed includes, the village leaders, parish priest, youth leaders, village 'Dai' and local healers, government officials and school teachers, a few political party members, a few very old members of the village, the staff and directors of the voluntary organizations and the medical officers and village health workers of government hospitals and primary health centres.

d) Bibliographical method

This tool is used to collect information regarding the government programmes for fishermen, the objectives of building fishing harbour and the other aspects related to fish economy.

Design

Since the coastal villages in Kanyakumari district are homogenous in nature, the impact of modernization of fish economy on the well-being of fishermen could be studied by conducting an indepth study in this village. Thus, the design adopted for this study is a 'case study' which is exploratory in nature. This design is used in order to identify the inter-linkages between the different components in production relations, namely the ownership pattern, the credit system the marketing system, and the pattern of technology used for fishing, and their relationship to the well-being of fishermen.

Pilot Study

Initially a pilot study is conducted in order to establish rapport with the community leaders, youth and the parish priest. The interlinkages between fishermen and the merchants/middlemen is understood. The pilot study also helped the researcher to familiarise himself with the problems of the village. A field diary is kept for recording the observations and responses of the informal interviews and discussions which continued throughout the study. On the basis of these experiences and data, the interview schedule is developed. The questions are first formulated in English, but the final printed form is in Tamil only.

Full Scale Field Operation

In the main study, the interview schedule is extensively administered to collect all the relevant and important data pertained to the study. The researcher himself recorded the responses mostly at the time of interview and in some cases after the interview. The main study lasted for four months (October'85 and January'86). Most of the time the responses are collected in the evenings as the fishermen are free only in the evenings. The respondents did give a good cooperation to the researcher. The data collection also included a few visits to three primary health centres, a dispensary and a community health centre run by the voluntary organization, two government hospitals, officials connected with Fisheries and the directors of the voluntary organizations. The researcher also visited Centre for Development Studies, Trivandrum and Central Marine Fisheries Research Institute, Cochin.

CHAPTER - IV

PRODUCTION RELATIONS IN FISH ECONOMY

CHAPTER-IV

PRODUCTION RELATIONS IN FISH ECONOMY

In fish economy the modernization process is closely related to the production relations. Hence, in order to understand the modernisation process, the analysis of production relation in fish economy is of great importance. In this study the following variables are taken into consideration for the purpose of analysing the production relations in fish economy. They are :

1. The ownership pattern
2. The credit system
3. The marketing system
4. The pattern of fishing technology and the fishermen's knowledge about the resource base.

I. ARTISANAL FISHERMEN

a) Ownership Pattern

In this study the ownership pattern means mainly the ownership of fishing equipments, that is, crafts and gears. In the case of Artisanal fishermen the catamarams and the fishing nets form the main assets. In the case of modern fishermen it is the mechanised boats and nets. An analysis of ownership pattern that exists among the artisanal fishermen is important

because of the interlinkage between the ownership pattern and the productive capacity of fishermen. Secondly, in the production relations of any sector either agrarian or fishing, the productive capacity of the people is valued against their right to ownership. It is their right to ownership which gives them a a sense of social and economic security as it gives them the power to enjoy what they produce. In this analysis, what and how much of right to ownership is enjoyed by artisanal fishermen is looked into in detail.

Table-I

Number of Families Owning Catamaran

S.No.	Groups	No.of families owning Catamaran	%age	No. of Caramarans	%age
1.	One Catamaran	69	53.48	69	33.33
2.	Two Catamaran	42	32.55	84	40.57
3.	Three Catamaran	18	13.95	54	26.08
	Total	129	100.00	207	100.00

The artisanal fishermen are divided into three groups viz. I, II, III based on the number of Catamarans they own. Accordingly in the group-I, there are 69 families owning one catamaran each; in the group-II there are 42 families owning two catamarans each and in the Group-III there are 18 families owning three catamarans

each. Thus there are 69, 84 and 54 catamarans owned by the three groups respectively.

The Table-I indicates the inequality existing in ownership pattern among fishermen. About 54% of the families own only 32% of the crafts in the village, 32% of the families own 41% of the crafts and 14% of the families own 26% of the catamarans. It means that the minority is in possession of the majority of fishing equipments.

Table-II

Years of owning Catamarans

S.No.	Years of owning (yrs)	No. of catamarans of each group I	II	III	Total	Percentage
1.	0 - 2	22	26	8	56	27.05
2.	2 - 4	33	35	20	88	42.51
3.	4 - 6	11	11	16	38	18.35
4.	6 - 8	3	7	7	17	8.2
5.	8 - above	-	5	3	8	3.86
	Total	69	84	54	207	100.00

From Table-II, the inference derived is that the catamarans last maximum a period of 4 - 6 years with a few exceptions. In a fishermen community, the social and economic status of fishermen depends largely on the number of catamarans

they own. The more number of catamarans they own, the more status they enjoy in their community. Another important factor is that the more number of years they own, the more rights of ownership they enjoy.

However, their ownership right does not last long as they have to buy new crafts after 4 to 6 years. Invariably they approach money-lenders to get loans for buying new crafts. As a result their ownership rights can be removed at any time by the money-lenders in case of the former's failure to repay the loan or when the market ties with the latter is broken.

Even though the phenomenon of cessation of fishermen's ownership seldom takes place, we cannot say that the fishermen enjoy full ownership right over their crafts. However, the fishermen who are free from these conditions do enjoy full ownership rights over their crafts. But the interlinkages between ownership pattern, credit and marketing system are such that the fishermen are not free from the bondage of indebtedness which do not give them the power to ownership.

The table-III indicates that the catamarans costing more amount i.e. Rs.3500/- to Rs.4500/- is owned only by about 21% of the fishermen families. Similarly, the catamarans costing less amount i.e. Rs.500/- to Rs.1500/- is also owned by only about 23% of the fishermen families. The fishermen say that to

Table-III

Cost of Catamarans

S.No.	Cost (Rs.)	No. of Catamarans	Percentage	No. offamilies owning catamarans.	%age
1.	500 -1500	53	25.60	29	22.48
2.	1500 -2500	82	39.61	31	24.03
3.	2500 -3500	48	23.18	43	33.33
4.	3500 -4500	24	11.59	26	20.15
	Total	207	100.00	129	100.00

Median Cost: Rs.2500/-

have a minimum standard of catamaran they need at least Rs.3000/-. But the median cost of catamaran is Rs.2500/-. This shows that the fishermen of this village own the catamarans which are not in bar with even the minimum standard of catemarns needed for fishing. Moreover they say that a decade ago the price of wood was very cheap and now there is a steep hike in the price for wood used for catamarans. As a result the fishermen's dependency on the money-lenders has increased. The cost of catamarans also reveals the inequality of ownership pattern among fishermen as only above 21% of the families are having catamarans worth Rs.3500/- to Rs.4500/-. The higher the cost of catamarans, the better the quality of the catamarans. The fishermen are able to go for deep sea fishing i.e.

upto 40 to 50 kilometres only if the catamarans are of good quality. Usually in bie catamarans, more fishermen (upto 5) can go for fishing at a time. Thus in a way the quality of the catamarans determines the income of the fishermen too. But the fishermen owning catamarans of such quality are only a few and hence only they are able to earn more income.

Table-IV

Types of Gears owned by Fishermen

S.No.	Types of Gears	No. of families owning	Percentage
1.	Prawn Net (Podivala)	113	87.59
2.	Lobster Net (K	118	91.47
3.	Saradine Net	85	65.89
4.	Andovies Net	58	44.96
5.	Encircling Net	54	41.86
6.	Hook and Line	115	89.14

The Table IV indicates the importance of shrimps (prawns & lobsters) in fish economy. The prawns and lobsters yield more income to fishermen than other fish. Hence, majority of the fishermen own atleast a prawn net and a lobster net. Even though the prawn and the lobster nets have to be changed/renewed every year, every fisherman

family owns these two nets. The sardine and anchovies nets are not owned by every fisherman family as only about 66% and 45% of families own these nets. The encircling net (Thattumadi) is used for fishing only during certain months. Thattumadi which had been the main gear used for fishing for decades together, is seldom used due to the advent of nylon nets. In a fishing community Thattumadi cannot be owned by every family as it needs 4 to 5 labourers to operate. More over, it needs two crafts and a few other equipments. Hence, only a few families in a village had been owning this. As long as Thattumadi remained as a main gear for fishing, all the fishermen in the community had some steady income and the needs of the poor and the disabled were also looked after. This is because the fishing was carried on as a common venture and there was no profit motive among the fishermen and the merchants. But after the advent of Nylon nets, especially for prawns and lobsters, the fish economy took the path of market economy. Thd fishing became individualistic as each family began to segregate themselves from the common mode of fishing and began to possess fishing equipments for their own use. Thus, a sense of competition has started creeping into fish economy.

With the advent of Nylon nets and the increasing demand for shrimps from the developed nations, the fishermen are forced

to own such nets. Eventhough the introduction of nylone nets is the outcome of modernization of fish economy, it was not introduced with the intention of helping the artisanal fishermen to raise their standard of living. The ulterior motive behind this was to catch more fish inorder to cater to the demand of the multinationals.

TABLE V

Average Cost of Gears owned by Fishermen

Sl. No.	Types of Gears	Average cost (Rs)	No. of families ewing gears	Percentage
1.	Prawn net	1500	113	88
2.	Lobster net	1440	118	91
3.	Sardine net	2905	85	66
4.	Anchovies net	2810	58	45
5.	Encircling net	2916	54	42
6.	Hook and Line	500	115	89

The Table V gives the average cost of each fishing gears viz., prawn net, lobster net sardine net, anchovies net, Thattumadi and hook and line. The average cost for each type of net respectively is Rs.1500/-, Rs.1440/-, Rs.2985/-, Rs.2810/-, Rs.2916/-, and Rs.500/-. The important feature in this figure

is that the lower the cost of nets the higher the number of families owning them. For instance, 91% of the families own a net costing Rs.1440/- and only 42% of the families own a net costing Rs.2916/-. This pattern of ownership reveals the gap between the rich and the poor even among the fishermen in India.

TABLE VI

Crew Composition for Fishing

Figures in ( ) indicates percentage.

S.No.	Crew Composition	No. of Families.			Total
		A (having 1 catamaran)	B (having 2 catamaras)	C (having 3 catamaras)	
1.	Family members	53(77)	29(69)	10(56)	92(71)
2.	Others	16(23)	13(31)	8(44)	37(29)
Total		69(100)	42(100)	18(100)	129(100)

In this village, 71% of the artisanal fishermen operate these equipments solely with family labour and only 29% of them have crew members from outside their family. But in the case of artisanal fishermen, the fishermen having 3 catamarans have more number of outside crew members ie, 45% more than the other two catagories in the same group.

This is mainly because, the higher the number of crafts and gears, the higher the number of crew members needed.

The fish economy of artisanal fishermen does not have a labour system in the strict sense. The crew members are not paid daily wage or montly wage. Instead there exists a system of 'share cropping' ie, the total income of a day's catch/ harvest is shared by the crew members and an equal share is taken for the crafts and gears too. For instance, if three crew members operate a prawn net, the income will be shared by four i.e., three for the crew members and one share for the crafts and gears. But in the case of Thatumadi two shares are given for crafts and gears. This system is not strictly followed. For instance at the time of small catch the equipment owner does not take any share for the equipments. Similarly, when there is a major damage to the fishing equipments, the whole income is used for the repair of the crafts and gears and the crew members does not take any share for themselves. Thus the value of production is shared among the participants in production. (here the value of production is the amount given to fishermen by the merchants are not the real amount for which the fish is sold for). Fishing is a cooperative venture and cannot be carroied out without the help of many persons. In the artisanal fishermen community of this village, the question of employer and employee relationship between the crew members is invisible and is not very operative in nature. This is because the entire operation of fishing and

repairing of gears is done as a group activity by the owner and the other crew members. The division of labour seldom takes place.

However, the fishing has become more of family centred than community centred. This is mainly due to the changes that are taken place in fish economy due to modernisation. The mechanisation of fishing, the introduction of nylon nets, the increasing demand for shrimps from the developed countries like Japan and U.S.A., the interest of the merchant capitalist class in India and the role of local merchants and money-lenders, have contributed to the growth of capitalistic pattern of ownership in fish economy in which only a few own the majority of the crafts and gears. And it is this factor which has changed the cooperative venture into a competitive venture.

b) The Credit System

The nucleus of fish economy, especially of artisanal fishermen is the credit system that prevails there. It is this system which mainly shapes the fish economy. The production relations in fish economy are influenced, to a great extent, by the credit system. Therefore, the analysis of the credit system existing among the artisanal fishermen is inevitable and necessary. The credit system cuts through the day today life of the fishermen.

It is this system which ties the fishermen with the merchants and the middlemen who play a vital role in shaping the well-being of fishermen.

Table-VII

Number of Indebted Families

Category of Fisher-men.	No. of Fishermen Families				Total	%age
	Indebted (Total)	%age	Not Indebted (Total)	%age		
A	46	66.66	23	33.33	69	53.48
B	37	88.09	5	11.90	42	32.55
C	15	83.00	3	16.66	18	13.95
Total	98	75.96	31	24.03	129	100.00

A = Number of families having one catamaran each

B = Number of families having two catamaran each

C = Number of families having three caramaran each

Among the artisanal fishermen about 70% are indebted. The number of indebted families is more in category B and C, 88% and 83% respectively than in Category A which is only 67%. The reveals that the higher the value of asset higher the amount of debt given. The fishermen who are owning more than two catamarans are given more credits because they have the equipment to operate in all the seasons. On the part of the money lenders it means that they give credits mostly to those who own more equipments so that they can get more interest and income. The following table will clarify this.

Table - VIII

Sources of Credit

S.No.	Sources	Number of Indebted Families						Total	%age
		A		B		C			
		Total	%age	Total	%	Total	%age		
1.	Merchants-cum-Money lenders	29	63.04	26	70.27	12	80.00	67	68.36
2.	Middlemen-cum-Money lenders	12	26.08	9	24.32	3	20.00	24	24.48
3.	Others	5	10.86	2	5.40	-	-	7	7.14
Total		46	100.00	37	100.00	15	100.00	98	100.00

In the coastal villages of Kanyakumari district, the main sources of credit are the fish merchants and the middlemen or the auctioneers or the agents. There are two kinds of middlemen functioning in this village 1) The middlemen, who lend money independent of merchants. These middlemen are not involved in fish marketing. They only lend money and aunction the fish at the beach; 2) The middlemen who are appointed by the fish merchants. These middlemen are usually known as agents. Thus, the middlemen or the auctioneers operate as financiers and/or agents of big merchants. In either case, the middlemen exercise considerable degree of power over the marketing process.

The major sources of credit existing in Kumari Muttom are the merchants who lend money to fishermen. Among the indebted fishermen 68% have received credit from merchant-cum-money lenders and only about 25% of them have received credit from the middlemen-cum-money lenders. Thus the whole system of credit is controlled by the merchants themselves. They, indeed wield considerable control over the marketing process at Kumari Muttom. Another important factor is that among the fishermen who have received credit from the merchants-cum-money lenders majority of them fall under the category of B and C. The merchants have advanced loans to 80% of fishermen in category C and 70% of fishermen in category B. But for the A category of fishermen, they have advanced loans only

to 63%. In Kumari Muttom, in fact all the fish merchants are operating as money lenders. Thus the credit system, if at all it does any credit to fishermen it does only to somewhat well to do fishermen. Even though no security is required for sanctioning the credit, the money lenders lend money according to the repaying capacity of fishermen in terms of certain conditions which are predetermined by the former. The repaying capacity is measured on the basis of ownership pattern of fishermen. Thus there is an inevitable linkage between the credit and ownership pattern of fishermen. Even if the fishermen do not own any craft or gear, the credit he receives is mainly for buying crafts and/or gears and these will be hypotheticated to the money lenders.

Table-IX

Conditions against which credit is given

Conditions	No. of indebted families						Total	%age
	A(46)		B(37)		C(15)			
	Total No.	%age	Total No.	%age	Total No.	%age		
i) Selling shrimps to money-lender-cum-merchant.	43	93.47	33	89.18	14	93.33	90	91.81
ii) Commission to buyers.	26	56.52	26	70.27	14	93.33	66	67.34
iii) Commission to Money-lender	24	52.17	25	67.56	12	80.00	59	60.20

Since the fishermen of this village have received credit from all the sources against all the conditions, the percentage of families received credit is calculated on the basis of the total number of fishermen under each group.

i) Selling shrimps to money-lenders-cum-merchants:

This condition denotes that the credit is given for selling the prawns and lobsters directly to the money-lender. When the fishermen who have taken loan under this condition, sell the shrimp to their respective merchant-cum-money lender, the latter takes 10% of the total value of the shrimps from the former i.e. if the total value of the shrimp is Rs. 100 the money lender gets Rs. 10/-. Besides this, there are two more practices followed by fish merchants. The first one is based on the size of the shrimps. Accordingly, the merchants divide the shrimps into two categories viz. First and Second. The shrimps belonging to first category will get the actual prices prevailing in the market where else the Second category will get less than half the price of the First category. The fisherman has no say in this and this is decided wholly by the merchants. The Second practice is called 'Wattam' in their local language, by which the merchant reduces the weight of the shrimps. For instance, if the actual measure is 1000 gms the merchant will give money for 800 gms reducing 200 gms. This practice varies from merchant to merchant as the reduction varies from 50 gms to 200 gms per kg. This practice

is a common phenomenon existing in the village of Chinnamuttom.

From the above table-IX it is seen that 91% of the artisanal fishermen are given credit against this condition. Irrespective of the category of fishermen, this condition is binding on all the fishermen. This system of credit has created an interlinkage between credit and marketing. Hence, this is a market-tying relationship. Because of such practices, the marketing system and the credit system are interwoven and they, to a large extent, influences the production relations in fish economy. The profit motive is high in such relationship. It also affects heavily the productive capacity of a fishermen. The productive capacity of the fishermen at the time of harvest/fishing is not given its due merit as the value they receive while marketing is disproportionate to the labour they have spent. The real value of the product which the fishermen are supposed to enjoy is deprived by the merchants who play no role in the actual production. Thus, the credit system in fish economy is used as a means to extract the surplus value out of the labour of fishermen. This practice is the outcome of the modernisation of fish economy which has become market oriented.

ii) Commission to Buyers

The Second condition is yet another practice which is not prevalent in all the coastal village of Kanyakumari district.

It is locally called as a 'support', by which it is meant that the buyers at the beach have to pay certain percentage of money to the middlemen who have lent money to the fishermen from whom the buyer has bought fish. It is usually 5% i.e. for Rs.100/- the buyer has to pay Rs.5/- to the respective money lender. In Table IX, we find that 67% of the indebted fishermen are given credit against this condition. One wonders, in what way this can affect the fishermen. It does affect the fishermen, as such practices bring down the price of fish. On the part of the buyer; usually the cycle loaders, head loaders and the small merchants, the more price they give the more money they have to pay to the money lenders. The buyers at the beach are good at assessing the value of the fish. The competition among the buyers comes down due to such practices. As a result, again the fishermen are deprived of the real value of their produce. But the real beneficiary is the middlemen. In such practices, the buyers also have no say. Another important feature is that the fishermen who have not received credit from the money lenders will get more price. The investigator observed that there is a good competition for the fish sold by the fishermen who have not received credit against such conditions. This credit system also creates a relationship with marketing system. Here three types of people enter into the relationship viz. middlemen, fishermen and the buyers.

iii) Commission to money lenders

This condition is called as 'Labam', in the local language. According to this practice, the money lenders get 10% of the total value of the fish. For instance, if a fisherman sells fish for Rs.100/- he will get only Rs.90/-. According to Table-IX about 60% of the fishermen, among the debtors, have received credit against this condition.

From the above analysis, we find that almost every fishermen who have received credit from the money lenders is affected by such practices as almost all of them have received loans against all the three conditions. The purpose for which the credit is given may vary. But they are not significant as the conditions against which the credit given is playing a vital role in terms of the value that the fishermen get. The modernisation has not only reduced the potential catch of fishermen due to the depletion of resources, but also has reduced the real value, the fishermen are supposed to get for the little amount of fish they catch.

Among the fishermen who are taken loans from the money lenders majority have received credit upto Rs.3000/-. Hence the average amount comes to Rs.3000/-. The important feature is that more amount is given as credit against the third

Table-X

Amount of credit Given to Fishermen Against Each Condition

S.No.	Amount (Rs.)	Conditions						Total	%age
		(i)		(ii)		(iii)			
		Total No. Fisher-men	%age	Total No. Fisher-men	%age	Total No. Fisher-men	%age		
1.	0 - 1000	41	45.55	44	66.66	5	9.09	90	91.83
2.	1001 - 2000	37	41.11	15	22.72	19	34.54	71	72.44
3.	2001 - 3000	11	12.22	5	7.57	24	43.63	40	40.81
4.	3001 - 4000	1	1.11	2	3.03	6	10.90	10	10.20
5.	4001 - 5000	-	-	-	-	1	1.81	1	3.06
	Total	90	100.00	66	100.00	55	100.00	212	216.36

condition that is commission to money lender, by which they receive more percentage of commission. Eventhough more number of persons have received loans against the first condition, the money given as credit is less as compared to money given as credit the third condition. This indicated that the money lenders have invested more money in credit systems which gives more returns.

Table-XI

Years of Indebtedness

Years	Conditions						Total	%age
	First		Second		Third			
	Total	%age	Total	%age	Total	%age		
0 - 3	44	48.88	40	60.60	34	61.81	118	55.92
4 - 7	42	46.66	18	27.27	16	29.09	76	36.01
8 -11	4	4.44	2	3.03	4	7.27	10	4.73
12 -15	-	-	3	4.54	-	-	3	1.42
15 -above	-	-	3	4.54	1	1.81	4	1.89
Total	90	100.00	66	100.00	55	100.00	211	100.00

From Table XI, we find that among those who have received credit under the third condition about 62% of them are indebted for 3 years, where else, for other conditions viz. first and second only 49% and 61% of them are indebted for three years respectively. Similarly, among those who are indebted for 8 to 10 years the fishermen under the third condition form the majority. However, the fishermen indebted for 15 years and above come under second and third conditions. This reveals that those who received money against the third and second conditions seem to be indebted for a long time. This is mainly because of the size of the amount

they have received as credit from the money lenders as the amount received as credit under these conditions is higher than the amount received under the first condition. The money lenders are not worried about the repayment of the money given against second and third conditions because they get more income through this condition than the first condition. However, the years of indebtedness varies from 0 to 7 years as the fishermen keep on changing their money lenders. In many cases the repayment of the entire amount is done by borrowing money from other money lenders. Therefore, they always remain in debt.

c) The Marketing System

One of the main components of production relations in fish economy is the system of marketing. The production prpcess in fishing is complete only when the fish is marketed. The fishermen who are the actual producers, do not have any power to control the marketing system in fish economy. This is because, the middlemen and the merchants, who have advanced credit to fishermen have established a control over the marketing system that the fishermen are not able to sell the fish as they like and get the due price.

Before we go into the marketing process and structures in the fish economy, it is necessary to analyse and understand some of the practices, at the time of marketing. The poverty and the miseries of the fishermen cannot be attributed to their practice of wasteful expenditures, such as drinking which is a common misconception among the public. There are different system of collecting revenues in the fish economy which often result in the misery of masses and the luxury of the few. One of them is called 'Makimai' - which is a kind of local tax imposed on the merchants who come to buy fish. The right to collect 'Makimai' is auctioned once in a year. The highest bidder pays part of the money on the day of the auction and the rest in two or three instalments. Usually it is charged from the cycle loaders. Each cycle loader has to pay paise 50 for each load of fish he carries to the market outside the beach.

There is a little difference between 'Makimai' and 'support system' prevelant in the village of Kumari Muttom. In this village as we have already discussed, the revenue is collected from each buyer by the money lender, who buys the fish from fishermen who have taken credit from the money lender. In the case of 'Makimai' the revenue is collected from all the buyers. In this system, the real beneficiary

is the one who collects 'Nakimai', usually a middleman or a fish merchant who acts as money lender as well.

Another such practice prevalent in the coastal villages of Kanyakumari District is called 'Tharavu' - which is a kind or form of interest collected by the middlemen who have advanced loans to the fishermen. This interest usually ranges from 3-5%. It is said that the credit given by the money lenders in the fishermen community is interest free. It is true in the sense that the money lenders do not charge interest for the receipient, as in the case of bank loans. But, a certain percentage is fixed to the charges, from the fishermen concerned whenever they sell the fish. In the case of Kumari Muttom village, it is called 'Labham' in the local language. But the percentage is very high i.e. 10%. While the fish is laid on the beach for sale, the money lenders play the role of the auctioneers or appoint other persons as auctioneers to auction the fish. While auctioning the fish, he also takes fish for himself. Usually after the sale of fish, the buyer or the merchant reduces some amount from the total fish price by giving an impression that the price is too high. In such cases the fishermen cannot get the money from the merchants directly and they have to get the money through the middlemen either in the evening or after

a few days. At times, the delay in paying the money to the fishermen is too long, especially in the case of dry fish and prawns, that they again take credit from other sources on higher interest. And, if the merchants run at a loss the fishermen will not be given their original price and at times they have to forego the entire amount.

There is another malpractice done by the merchants and/or by the auctioneers who are also the agents of the merchants. At times the credit given to fishermen either for consumption or for working capital is given through such agents. The credit system makes the fishermen to enter into a secret understanding with the merchants that he would sell the fish only to the latter. During the auction, the merchants concerned or their agents settle the deal by overbidding any other competitors. But at the time of payment, the merchant pays the fishermen concerned either an amount which was previously agreed upon or just arbitrarily fixed by him.

"Kuthaka" or Sanjayam' is another system of collecting funds for the village. by this system, certain percentage of the catch is to be contributed by the fishermen on particular days of the week. In the village of Kumarimuttom it is collected on every Thursday and the percentage fixed is 25.

Usually, it is collected for building Churches, buying property for the Parish, celebrating village feast and for meeting other expenses such as court cases due to communal clashes etc. The fishermen have no hesitation to pay this amount to church because they believe, that this money is given to God. This is how the church has made them to believe. The more you give to God the more you receive. This is the slogan preached by the priests. But the question is does this money reach the God at all? This money is very seldom spent on productive purposes. No proper account is maintained. The persons in the village/parish committee are usually the rich boat owners, merchants and a few artisanal fishermen. The people cannot question the mode of spending of this money by the committee members. Again in case of defiance or refusal to pay the contribution by any fisherman, he will be denied of his sacraments. Thus the sacred sacraments are used as means of extorting money from the fishermen. In a way religion is used as a means of exploitation. These rules and conditions are applicable mainly to the poor fishermen and the rich gets away because they control these institutions.

The persons engaged in buying the fish at the beach consists of three catagories : small dealers, middle level

merchants and big merchants. The small dealers are men and women from in and around the village who cart the fish as head-load or on cycles to be sold in the nearby market places. There are a few small markets where the cycle loaders and head loaders market fish. Usually the fishermen in the coastal villages of Kanyakumari District depend on the neighbouring villages for all consumable goods such as cereals, food grains, firewood, clothes, etc. At times, the market price for fish is very much influenced by the price of the other consumable items. When the price for the other commodities, especially, the cereals go up, the fish price also goes up. However, in the case of prawns, lobsters, and cuttle fish, the price is controlled by the big merchants in the local areas who act as agents of the exporting companies in Kerala, which are controlled by the multinationals in Japan and U.S.A. Thus the price for shrimps depends on the needs and demands of the multinationals. In the case of shrimps, if the multinationals stop importing, the price will come down drastically.

At the local level it is the local fish merchants who act as agents of exporting companies. In fish economy, the higher the demand the lesser will be the supply and

the higher introduction of mechanisation which lead tc depletion of resources. At the local level, due to depletion of resources there is a rise in the credit pattern because the merchant-cum-money lenders are ready to give more credit in order to market more fish. The more number of fishermen to whom they give credit, the more fish they get for marketing.

In the village of Kumari muttom, there are fish merchants, among whom three market fish, especially, shrimps directly to the exporting companies in Kerala. The other two are mainly involved in marketing other fishes in the neighbouring markets. The former three are the big merchants and the latter two are called the middle level merchants. The big merchants also own vans/ matadors to carry other kinds of fish to different markets in Trivandrum, Madras and Kovilpatti with ice. They have agents in these three markets who buy the entire fish from them with a fixed price for each bundle (150 kg). The bundles are made separately according to the species and each species has a separate market price. These merchants buy the fish through auction and sell the fish by weight in the market. The merchants do gain a lot by selling the fish according to weight. With regard to prawns the exporting agents fix price

for each kilogram which is not known to the fishermen. Moreover the merchants get a commission of paise 50 for each kilogram of shrimps they market to exporting companies. Even though the fishermen are aware of the financial advantage to the merchants, they cannot escape from the malpractices which arise out of credit. The other two merchants, at times market fish directly to the exporting companies and/or resell the shrimps to other big merchants for a slightly higher price than the price given to fishermen. The big merchants have taken high amount of credit from the exporting companies in Kerala, which are directly related to the multinationals.

This is a chain of relationship from the multinationals to the local fishermen. The multinational gives credit to Indian exporting companies to establish ice plants and other processing machineries. The exporting companies give credit to local merchants to buy lands and give loans to fishermen. Thus each category of sections involved in marketing fish has a profit motive which is the essential element of market economy. The profit motive in market oriented fish economy results in the subjugation of fishermen by the merchants and middlemen who want to gain profit at any cost. By the credit that is advanced to fishermen, apparently one gets the impression that the merchants are helping the fishermen to buy fishing crafts and gears. But the conditions are so tantalizing and exploitative that they perpetuate the poverty

of the poor fishermen. This is mainly because of the interlinkage between credit and marketing.

The cycle loaders form another category of fish buyers at the beach. They buy the fish at the beach and resell it at nearby markets. The others engaged in marketing fish are the women who market fish by carrying on their heads. They walk up to 7 - 8 Km. around the neighbouring villages in order to sell fish. Women of some fishermen families do play a vital role in generating income to their families.. The children of such women get little attention from them as they come back home late at night.

Most of the artisanal fishermen at the village of Kumarimuttom expressed that there exist a collusion among the buyers themselves, mostly among the local merchants. This became evident from the fact that at times, the price given to fishermen for each Kg. of shrimps by all the big merchants is similar. At the beach when the fish is laid out for auctioning the price of the laid out fish depends on the competetion between the merchants. Hence, they have fixed a predetermined amount for each category of fish. The size and type of fish caught also determines the price. Whenever there is an enormous catch, the price will come down.

However, for some fishes like mackrels and Tuna, the price is usually constant. In case of refusal to sell the fish especially the shrimps, the money lender-cum-merchant to whom the fishermen are indebted will wait for two or three occasions and send mediators to remind and warn the latter. If the latter continue to default, the former will take actions like seizing of the crafts and gears and in some cases the houses too. In this study village there are three cases of seizing of houses. Usually the debtors do not default as they have no other sources to depend. In fact, when asked them whether they would like to prefer receiving loans from banks they said that they prefer only the money lenders. The reason is that whenever they are in need they get loans and no time limit is fixed for repayment. They are made subservient to such a credit system that they are not able to come out of this dehumanising system. The multiple hold of the merchants and the middlemen on the fishermen exercises a dominant role in the marketing system prevalent in this village.

d) Technology

One of the major components of production relations in fish economy is the fishing technology. The modernisation of fish economy started with the introduction of new fishing

technologies with the view to catch more fish. It was believed that the sea resources were not exploited fully. It was also believed that the well-being of fishermen could be enhanced if they could catch more fish. In Chapter IV, we have already discussed the various aspects of fishing technology. Before, we analyse the importance of fishing technology in production relations of the village of Kumarimuttom, let us see the advent of machanisation of fish economy in Kanyakumari district.

The fishermen in Kanyakumari are known for their skill and knowledge in fishing. As mentioned earlier, they even go up to 50 - 60 kms to the sea and come back after two or three days without missing their direction. Even though they use artisanal crafts and gears for fishing, they are not resistant to modern technology. The fishermen of Kanyakumari district were conversant with the technique of Nylon gillnetters and boats which were initially introduced by Mrs. Lourdammal Simon (1957 - 62) minister of fisheries in the Govt. of Tamil Nadu (Leon 1982). But then the mechanised boats were introduced to help only the affluent class among the fishermen who supported her at the time of election. Mr. Duraiswammy, another person in the political sphere who was defeated by Mrs. Lourdammal Simon began to speak against the mechanised

boats saying that the noise made by the propeller send the fish away. Yet, the same person became the president of Kanyakumari District Boat Owners Association and began to support the boat owners. Of course, he did defeat Mrs Lourdammal Simon in the next assembly elections with the support of boat owners. Hence, the introduction of mechanised boats were used as a means to get political power. While the modernisation of fishing helped the already rich to go higher in the socio-economic ladder, it pushed the poor fishermen to the valley of poverty and misery. There was resistence initially among the fishermen to accept the mechanised boats and nylon nets. But this resistence vanished when Mr. Kurusaiah, a native of Coleachel took the initiative of going to Alleppy in Kerala for fishing. The bumper catch he got, prompted other boat owners to go to Kerala and other fishing places such as Tuticorin, Mandapam, Rameswaram and Madras. But sooner or later there was an upsurge in the violence between artisanal and modern fishermen. As a result, many fishermen from both sections were killed and many mechanised boats were burnt. The governments' effort to implement the fishing Regulation Act, were futile and even today the modern fishermen do not hesitate to encroach the traditional waters. The modern fishermen lobby is supported by the politicians who fully depend on the boat owners at the time of elections.

Apart from the Tamil Nadu government's effort to mechanise the fish industry, in Kanyakumari district under the guidance of Kotar Social Service Society (KSS), a project called Indo-Belgian Fisheries Project (IBFP) at Muttom was started in 1968. The main components of this project were 1) the introduction of nylone nets, 2) mechanisation of catamarans and 3) test of beach landing crafts. After a review of this project, it was wound up in 1973.

The introduction of nylon nets have replaced the cotton nets except the bell shape net which is called 'Thattumadi'. This scheme also gives employment opportunity to many women in the coastal villages. However, the Tamil Nadu Govt. gave licence to install Japanese webbing mechines to a few persons especially one at Manavalakurichi. This has become a threat to the employment of these women folk. Inspite of the struggles made by these women and the fishermen, this mechines still exist. The mechanisation of catamarans started with the import of 100 out-board motors (Evinrude 18 HP powered by petrol and kerosene). The mechanised catamarans did yield more income than the non-mechanised catamarans. But the fact was that motors were no more used after 1972 due to following reasons.

The project could not take into account the social structure of the village and marketing system. Since the project was partly staffed with foreigners and as funds were coming from abroad, there were false expectations among the fishermen. The relationships between the project staff and the fishermen were strained as the former had a tough time to recover the customs for the machines which were supplied free of cost. During the lean seasons, these mechanised catamarans could not be operated due to recurring expenditure on fuel. The price for the spare parts rose high. One of the main reasons for the failure of this project was that after 1973, there was a steep increase in the depletion of resources in the sea. Hence the mechanised catamarans had to return to the beach with less catch thereby incurring more expenditure for the operation. (Gillet, 1978). Same is the case with the latest introduction of Yamaha out board mechines. The fishermen who bought these machines expressed that the initial cost was less but the spare parts are too costly to buy. This is the typical Japanese market mechanism by which the Japanese find market for their products in the developing countries.

The scheme of the test of beach landing of crafts also failed as these crafts could not be operated in the high-surf-sea waters of Kanyakumari District. The fishermen who bought

these boats has to undergo a heavy loss and they were termed as the defaulters because of their inability to repay the loan. The mechanisation of fishing in Kanyakumari district under different plans appear to have helped a few entrepreneurs to get capital and know-how and to acquire a fleet concentrating wealth in the hand of a few and finally leading to the entry of big business houses in fisheries (Gillet, 1978). The traditional fishermen are no more confined to this village, but are now dependent on distant markets and the prices prevailing there. Today, in many fishing villages the fishermen accused travllers for destroying the stock of marine wealth and disturbing the ecology of fish breeding grounds. The depletion of resources have led to the migration of fishermen in Kanyakumari district to other coastal villages in Kerala and Tamil Nadu. In fact, they migrate with their families and crafts and gears and come back to their own villages after a few months. The mechanisation has led to constant struggle between the modern and artisanal fishermen. The recent violences in Madras Mandapam, Veerapan pattinam, Uvari and Colachel are the typical examples.

It is against this background that the fishing technology in the village of Kumarimuttom is analysed. In this village, there are 22 mechanised boats and one mechanised catamaran.

(More details about the mechanised boat owners will be dealt in the next chapter). When technology in fishing is considered, the technical knowledge and skills of the artisanal fishermen should come as the starting point. But when the technologies are introduced, the artisanal fishermen are forced to subordinate to the alien technology instead of the technology acting as a tool in their hands. The artisanal fishermen in this village know all important places (Madai) in the sea and the type of species found there. While they set sail for deep sea fishing, they make use of the mountains in the plains for knowing the directions through which they are sailing. This is known as 'Kaniyam'. In this technique, they sail between two mountains one at the eastern side and one at the western side. Similarly when they come back if they know that their catamarans are sailing in between the same two mountains, they are sure to reach their village shore without losing direction. They are capable of identifying the sea current's direction even from the beach. According to them there are two kinds of current viz., 'Neevadu' and 'Vanuvadu'. The former means the current is from western side to eastern side and the latter is from eastern side to western side. Their technique of catching big fishes like shark, ray-fish and mackerels are very interesting. Usually these fishes are caught with hook and line. In the case of big mackerels, as soon as

it is hooked, they know that it is mackerel without seeing it. Once they know that it is hooked, they release all the line (rope) and allow the fish to run so that it might get tired soon. In the case of big sharks, they remove the anchor and run alongwith the shark wherever it goes. When the hooked fish tries to escape if they try to pull the fish, the chances of breaking, the line is more. Once the fish is tired, then it is pulled easily towards a catamaran and hooked with another one which is attached to a long stick (Koluthadi) and the head of the fish is hammered with a thick and round stick (Adikambu). There is another kind of fishing in these village which is called 'Mettu'. The line has atleast 500 - 1000 small hooks. At the tip of each hook the prey is attached and put into the sea horizontally. After an hour the line is pulled. If they are lucky, they get upto 200 to 300 fishes at a time. This is a very tedious way of fishing as it involves long time in arranging the hooks and attaching the prey and this is not used in all the seasons.

Yet another kind of fishing by hook and line is called 'Asichal'. Here again many tiny hooks are tied to the line. Instead of prey a colourful fibre is tied to the tip of each hook. The one end of the line is in the sea and the other is tied at the back of the catamaran. This kind of fishing

is done while the catamaran is sailing. It is used for catching sardines and other small fishes. In the first form of fishing by hook and line, there is a metal string attached between the hook and the line so that the fish may not break the line by biting with its teeth.

Before the advent of mechanisation, the hook and line and the encircling nets, were used as the main fishing gears. Almost all the families used to have hook and line as it is very cheap.. The Thatumaram were owned by only a few families, but all the fishermen used to go for fishing as each set needs 5 - 7 persons and two catamarans. Before the introduction of mechanised fishing crafts and gears, the credit system existed was welfare oriented rather than profit oriented. According to the views expressed by the old fishermen of this village. This village was a self sufficient village as there was an equal sharing of the value produced.

The type and the method of repairing the nets involved high technical skills and mathematical knowledge. The nets which are torn and have lost the shape, are given shape and form by the fishermen. This knowledge and skills are passed on from generation to generation verbally. The mechanisation may not have destroyed the traditional skills and knowledge of

fishermen in this village. But the main problem is the depletion of resources and the gradual withering away of their traditional method of fishing especially by Thattumadi and hook and line. Now a days these two forms of fishing gears are used only in the month of December to February which is supposed to be the lean season. Another impact of mechanization is that it has helped only a few sections of the community, mainly the boat owners and the merchants.

The artisanal fishermen's knowledge of the resource base and the technology used by them are intimately related to the production relations, especially, at the harvesting level. It is the technical knowledge and skill in fishing which help them to go in search of fish and catch more. The labour used in this production process is much more higher than the mechanised fishing.

II MODERN FISHERMEN

a) Ownership pattern

Modernisation of fish economy has led to the growth of mechanised boats in this village. There are three kinds of mechanised boats operating in this village. These boats are categorised on the basis of their sizes, namely, 28 ft., 30ft and 32 ft. In this study is these three categories are grouped

under A, B and C respectively. The group C is known as trawlers.

In order to understand the production relations in fish economy, as in the case of artisanal fishermen, in the modern sector also, the following variables are taken into consideration. They are the (1) ownership pattern; (2) the credit system; (3) the marketing system and (4) the pattern of technology used for fishing.

Table-XII

Number of Fishermen Families Owning Mechanised Crafts

(Figures in parenthesis denote percentage)

Groups	No. of Boats	No. of families owning	Percentage
A	3 (17.64)	3	20.00
B	9 (52.94)	8	53.33
C	5 (29.41)	4	26.66
Total	17 (100)	15	100.00

From the Table-1, we find that among the mechanised boats, nine belong to Group B and five belong to Group C. The majority of the boats belong to Group B and C which are bigger in size as compared to the boats of Group A which has

only three boats. The boats of Group A are not used for catching shrimps. Some of the boats in Group B are also used for catching prawns. But the C group boats are used mainly for catching prawns. It indicates that the mechanised boats are used mainly for the purpose of catching shrimps which have a good market.

In the above table, we also find that among the families owning mechanised boats, most of them own the boats which are mainly used for catching prawns. When compared to the total number of households owning fishing crafts and gears, the households owning mechanised crafts and gears are only about 15%. There are 151 households owning fishing crafts and gears out of which 129 belong to artisanal sector and only 22 belong to modern sector from which only 15 are selected for the study. It is learnt that only about 15% of fishermen families are able to have accessibility to modern fishing techniques. Thus there is a gross inequality existing among the fishermen with regard to their ownership pattern. It is also found that among the fishermen owning mechanised boats, the system of share-holding seldom exists.

The Table-II reveals that the majority i.e. out of 17 boats, 12 boats are owned for 5-6 years only. Only two

boats are owned for more than nine years. The mechanised boats were introduced in the year 1952 itself. But, only very recently, the mechanised crafts and gears have been in operation in this village. In the opinion of the elders of this village even though there is a decrease in the amount of fish caught, it has not affected the growth of mechanised boats in this village. One of the reasons why majority of the boats in this village are owned only for 5-6 years is the durability of the boats. It is learnt that the boat owners try to sell the boats after 4 or 5 years as they run into many repairs. Another reason is the heavy maintenance cost. Once the boats start giving any mechanical problem they are disposed off by the owners as early as possible. In some cases due to heavy interest for the loans received, the boats are sold. Hence, the question of ownership depends on the quality and the maintenance of the boats.

From the Table-III, we find that eight mechanised boats cost Rs.30,000 - 50,000, three boats cost Rs.50,000 - 70,000, two boats cost Rs.1,10,000 - 1,30,000 and another two boats cost Rs.1,30,000 and above. We find that in the case of group C, 40% of them cost Rs.1,10,000 - 1,30,000 and another 40% of them cost Rs.1,30,000 and above. This indicates that there is a vast difference in the cost of different types of boats owned. The more costliest boats come under group 'C'

Table-XIII

Years of Ownership

S.No.	Years	Groups						Total	Percentage
		A		B		C			
		Total	Percentage	Total	Percentage	Total	Percentage		
1.	5 - 6	2	66.66	5	55.55	5	100	12	70.58
2.	7 - 8	1	33.33	2	22.22	-	-	3	17.64
3.	9 -10	-	-	1	11.11	-	-	1	5.88
4.	11 -above	-	-	1	11.11	-	-	1	5.88
	Total	3	100.00	9	100.00	5	100	17	100.00

Table-XIV

Cost of Mechanised Boats

S.No.	Cost (Rs.)	Groups of Boats						Total	%age
		A		B		C			
		No.	%age	No.	%age	No.	%age		
1.	30,000-50,000	2	66.66	6	66.66	-	-	8	47.05
2.	50,000-70,000	1	33.33	2	22.22	-	-	3	17.64
3.	70,000-90,000	-	-	1	11.11	-	-	1	5.88
4.	90,000-110,000	-	-	-	-	1	20	1	5.88
5.	110,000-130,000	-	-	-	-	2	40	2	11.76
6.	1,30,000 & above	-	-	-	-	2	40	2	11.72

which is about 30% of the total boats in this study area. Unlike the catamarans, the fact that lesser the price the higher the number of boats, does not exist in the case of mechanised boats.

Table IV reveals that about 41% of the boats have the gears worth Rs.25,000-30,000 and about 24% of them have gears worth Rs.30,000 - 35,000. The boats of Group 'C' own the more costliest gears. Forty percentage of them use the gears costing Rs.35,000 - 40,000. In the case of Group B about 45% of them use gears costing Rs.25,000 - 30,000 and in the case of Group 'A' about 67% of them use the gears costing Rs.25,000 - 30,000.

From the Table-IV it is clear that the higher the cost of boats, the higher is the cost of gears. From Table III and IV, we are able to understand the asset position of the modern fishermen. There is a vast difference between the value of assets owned by the artisanal fishermen and modern fishermen. The modern fishermen who form only about 15% of the total households in the study village have the accessibility to costliest fishing equipments.

Table-XV

Costs of Gears

S.No.	Costs (Rs.)	Groups of Boats owning gears						Total	%age
		A		B		C			
		Total	%age	Total	%age	Total	%age		
1.	20,000 - 25,000	1	33.33	-	-	-	-	1	5.88
2.	25,000 - 30,000	2	66.66	4	44.44	1	20.00	7	41.17
3.	30,000 - 35,000	-	-	3	33.33	1	20.00	4	23.52
4.	35,000 -40,000	-	-	1	11.11	2	40.00	3	17.64
5.	40,000 & above	-	-	1	11.11	1	20.00	2	11.76
	Total	3	100.00	9	100.00	5	100.00	17	100.00

b) Credit System

The credit system in fish economy has not spared the modern fishermen. Because of the need for more sophisticated technology in fishing, the fishermen tend to buy mechanised boats even if they have to borrow money heavily from the money lending sources. As a result they become more indebted.

The Table-V reveals that all the families of the modern fishermen are indebted. The main important factor is the different sources from which the credit flows. There are mainly three sources which advance credit. They are the nationalised banks, local fish merchants-cum-money lenders and the middlemen-cum-money lenders. From this Table, we find that Group 'C' families have taken loan only from the banks. Whereas, about 67% of group 'A' and 75% of Group 'B' have taken loan from the local fish merchants-cum-money lenders and the middlemen-cum-money lenders, respectively. In total, about 54% of the modern fishermen have taken loan from the local fish merchant-cum-money lenders. Thus the fish merchants form the main source of credit in the village of Kumari Muttom. As we have already seen, it is from the same fish merchants that majority of the artisanal fishermen have also received credits. However, the other main source is the Banks from which about 34% of the modern fishermen families have taken loans.

Table-XVI

Sources of Credit and Number of Indebted Families

S.No.	Groups	Number of families received credit under different sources.						Total	%age
		Banks		Merchant-cum-money lenders.		Other money lenders			
		Total	%age	Total	%age	Total	%age		
1.	A	-	-	2	66.66	1	33.33	3	20.00
2.	B	1	12.5	6	75.00	1	12.5	8	53.33
3.	C	4	100.00	-	-	-	-	4	26.66
Total:		5	33.33	8	53.33	2	13.33	15	100.00

The important feature of the amount of credit received by the families of modern fishermen, as shown in the Table VI is that the families owning the boats of Group 'C' have the highest amount of credits. Whereas the families of group 'A' and 'B' have received the lowest amount of credit. However, from the total number of modern fishermen 40% of them have received the credit of Rs.1000/- - 20,000/- as credit. It is also revealed that the higher the size and the cost of boats owned, the higher the amount of credit received.

In the Table VII, the percentage is calculated according to the number of times one has received credit from different sources. Since there are cases of modern fishermen receiving credit from different sources the percentage is calculated as above. About 54% of the modern fishermen families have received credit on the condition of giving commission to the money lenders. Forty percent of the modern fishermen families have received credit for selling shrimps to merchants-cum-money lenders and another 40% of them have received loan on the condition of giving commission to the buyers. Thus we find that the local money lenders exercise control over the credit system in the modern as well as traditional sector. From Group 'A' about 67% of them have received credit against the condition that they have to give commission to money lenders-cum-middlemen. In Group 'B', 75% of them have taken loan for selling shrimps to merchants-cum-money-lenders and about 63% of them have received credit against the condition that the money lenders will take commission

Table-XVII

Amounts of Debts Received by Different Groups of Modern Fishermen

S.No.	Amount of Credits	Families of different groups						Total	%age
		A		B		C			
		Total	%age	Total	%age	Total	%age		
1.	10,000 - 20,000	2	66.66	4	50.00	-	-	6	40.00
2.	20,000 - 40,000	1	33.33	2	25.00	-	-	3	20.00
3.	40,000 - 60,000	-	-	2	25.00	-	-	2	13.33
4.	60,000 - 80,000	-	-	-	-	2	50.00	2	13.33
5.	80,000 & above	-	-	-	-	2	50.00	2	13.33
	Total	3	100.00	8	100.00	4	100.00	15	100.00

Table-XVIII

Conditions Against which The Credit is Given (Figures in parenthesis denotes total no. of each group)

S.No.	Conditions	No. of indebted families of different groups						Total	%age
		A(3)		B(8)		C(4)			
		Total	%age	Total	%age	Total	%age		
1.	Bank interest	-	-	1	12.5	4	100.00	5	33.33
2.	Selling shrimps to Merchant-cum-Money lenders.	-	-	6	75.00	-	-	6	40.00
3.	Commission from Buyers.	1	33.33	5	62.5	-	-	6	40.00
4.	Commission to Money Lenders.	2	66.66	6	75.00	-	-	8	53.33

But he is yet to pay Rs. 1,41,000/- When the investigator met the manager of the particular Bank the following facts were revealed.

i) The boat of the particular owner has been insured for Rs. 1,50,000/- by bank as the boat is in the name of the bank. Hence, for every instalments the bank has to pay certain amount to the insurance company.

ii) The interest for the money paid to the insurance Company is charged from the fishermen.

iii) The bank has to charge interest for the interest in the case of default.

iv) If the beneficiary has not repaid any amount of loan received, the bank will send legal notice to the beneficiary and expenditures for such notices will be charged from the beneficiary.

Thus, the fishermen's credit is kept on accumulating. When asked this person for his delay in repayment it was understood that the main reasons were the less catch and the maintenance cost of the boats.

From this case study we can understand the intricacies involved in receiving loans from the banks. The repaying capacity of the modern fishermen depends on the steady income they get from the seas. But the fluctuations in their income is such that they are unable to repay the loan according to the stipulated schedule. The ever increasing depletion of sea resources and the high maintenance cost of mechanised boats have made the modern fishermen defaulters. As a result, the amount of debt is increasing day by day due to heavy interest charged. When the modernisation has geopardised the ecological system and the fish economy, can the nationalised banks help the fishermen in terms of giving loans to buy more and more mechanised boats?

The bank started issuing loans to the fishermen under the IRDP scheme. But this scheme has not really helped the fishermen for the following reasons. The loans are not given to the really needy as they aregiven to those who are already well off. Usually, it is not given for improving the indegenous crafts and gears. It is given mainly for buying mechanised boats. The interest charged is very high. There are no other modalities to see the functioning/operation of such mechanised boats. Among all the fishermen who have received laons from banks no one has cleared the debt so far.

c) Marketing and Technology

There is not much of difference in the marketing of fish between the traditional and modern fishermen. However, when the trawlers go to other places for fishing, there are a few market agents who take some advance from the fishermen for selling their fish in the market. At the same time there are a few money lenders from this place who lend money to the boat owners with the condition that the latter has to sell the fish especially, the shrimps to the former. In the native place, the fish is marketed as in the case of fish caught by artisanal fishermen. At times, when the boats catch more fish, the price for the fish comes down and owners of the boats, which are used for catching shrimps, have not received any credit from the money lenders against the condition that they will sell shrimps directly to the money lenders. However, they are unable to sell the shrimps directly to the fish companies which operate mainly through the merchants-cum-money lenders. In the modern fishing, the system of share cropping exists. Excluding the amount spent for the fuel and other items, the total amount is shared between the boat owners and the crew members. Usually, 60% is taken as share for the boats and nets and only 40% is shared among the crew members'. In some cases, it is given as daily wages too.

While operating the mechanised boats, usually, the crew composition ranges from 4 - 8 persons. In this village, the crew composition is mainly from the relatives of the boat owners. Each boat has a driver. The drivers are mostly self trained. Only three of them have undergone proper training for driving in training schools conducted by the government. Even though they are not properly trained, they are able to handle the minor repairs. However, for major repairs, they depend on the professional technicians and engineers.

The modern fishermen too are aware of the resource base like the artisanal fishermen in their local areas of fishing operation. However, when they go to other places for fishing they find it difficult to identify the resource base. Fishing by mechanised boats does not require much of manual labour, especially in the case of trawlers. The technology used by modern fishermen was purely alien to them. But, since the introduction of such technologies, the fishermen using them are, to a certain extent, conversant with the use of trawler nets and other nets which are used in boats. The dangerous fall out of this modernization is the clash of interests between the artisanal and modern fishermen. This arises out of the life cycle of the prawns in which the third stage of their growth usually takes place in the waters which in the area of operation of the artisanal fishermen. Hence, the modern fishermen encroach these area

inorder to catch prawns. As a result, as mentioned earlier, the violence between these two classes of fishermen are on the increase. The introduction of modern technology in fishing has not only disturbed the harmoney in social relationship of fishermen, but also has resulted in the ecological disturbances and the damage of the learned and imparted skills of fishermen.

CHAPTER - V

INDICATORS OF WELL-BEING

CHAPTER - V

INDICATORS OF WELL-BEING

There are different indicators of well-being of the members in a particular community. It is objective as well as subjective. The objective indicators are the opportunity for eduoation, availability of employment, ownership of resources, availability of housing, drinking water, sanitary facilities, health etc affecting the well-being of the population. These objective indicators are categorised as those belonging to physical, social and economic factors.

Attitudes perceptions and aspirations and how the people feel that the place is livable, are the subjective indicators of well-being which are grouped under psychological well-being of the population. Yet, while studying the well-being of a particular community it is important that these two categories are studied together as they are inter-related. While it is difficult to identify the indicators of these two types of categories of well-being separately, it is also difficult to apply a common yardstick to measure such indicators as the well-being of one community differs from that of another community.

In this study the following variables are analysed in order to understand the status of well-being of fishermen in the village of Kumari Huttom. They are the population characteristics, educational status, availability of water supply and the conditions of environmental sanitation, housing conditions, food consumption pattern, health conditions, the accessibility and the availability of various facilities to the community and the efforts of the community in achieving their felt-needs. The analysis of the indicators of the well-being of fishermen is important in order to understand the implications and the impact of modernisation of fishing on the fishermen. When a new innovation is introduced in a particular sector, it is nedessary that the importance of such innovations are properly understood. The importance, relevance and the usefulness of such innovations can be understood only when we analyse the well-being of a community where these new technological innovations are introduced.

A) POPULATION CHARACTERISTICS

TABLE - I

POPULATION CHARCTERISTICS OF THE SURVEYED HOUSEHOLDS

S.No.	Groups	House-holds	Population Male & Female	Total	%age	Average house-hold.
1.	Artisanel Fishermen (A)	129	146 (52.39) 378 (47.60)	794	82.79	5.53
2.	Modern Fishermen (B)	15	61 (53.04) 54 (46.95)	115	11.88	7.6
3.	Merchants-cum-Money_lenders (C)	5	18 (52.94) 16 (47.05)	34	3.54	6.8
4.	Middlemen-cum money lenders (D)	3	9 (56.25) 7 (43.75)	16	1.67	5.33
		152	504 (52.55) 455 (47.44)	959	100.0	6.30

While analysing the population characteristics only the surveyed households are taken into consideration.

From the Table-I, it is revealed that the average size of the modern fishermen household i.e. group (B) is 7.6 wherelse it is only 5.3 in thecase of artisanal fisherman. However, the average size of the entire surveyed households is 6.3 which is higher than the average Indian household i.e. 5.5 . When the investigator interrogated a parricular head

of a family who has eleven children, he explained that for him, more number of children, especially the male children means more income to the family. He also said that some type of crafts and gears need more crew members. If there are enough persons in a family, that family need not depend on others for operating their crafts and gears and that the entire income would come to that family. Another important reason for the fishermen having more children is that there are certain seasons when more than one type of crafts and gears are needed for fishing. For instance, Sardine nets and Anchovies nets. If there are enough persons in a family that family can operate these two types of gears simultaneously and earn more income and if one set does not yield any income, they can depend on the other type. Thus the nature of their occupation plays a vital role in the population charcteristics of fishermen families. To them it is a natural and fundamental necessity to have more childrenn. The same table also indicates the number of male population which is higher than the female population as the former is 53% and the latter is only 47%. If modern technology in fishing can replace the manpower, why is that the fisherman want to have more children in order to have more income ? This shows that the technologyintroduced is not accessible to them.

Table - II gives the age and sex wise distribution of the population in the study village. The female population between age group of 0 - 10 years is more than the male population as the former is about 31% and the latter is about 23%. It is seen that about 72% of the population come under the age group of 0-30 years. Another revealing factor is that the male population between the age group of 40-60 years is 17% and that of female population is only 10%. This indicates that the male population at this age group is more than the female population. The male members of the families are given more parental care and attention as they are the major earning members. The researcher's observation reveals that when the food is served, it is usually served to the male members and then only to the female members. There is also a difference in quantity of food served. Through the observation the investigator also found that at time of scarcity of food in the family due found that at time of scarcity of food in the family due to less income in a particular days, the male members are not made to starve, instead they are fed with the available food. In fact, it was a pathetic scene to watch in some families where the fathers distribute the little food they get to their hungry children and then go for fishing with empty stomach on the next day. The hunger does not refrain them from going for fishing. But their hunger is increased when they do not get fair price for their fish and the merchants and

TABLE II

AGE AND SEX - WISE DISTRIBUTION OF DIFFERENT GROUPS OF FISHERMEN

Age Group (Yrs)	SEX												Total	%age
	MALE						FEMALE							
	A	B	C	D	Total	%age	A	B	C	D	Total	%age		
0-10	101	9	3	1	114	22.61	126	9	4	3	142	31.20	256	26.69
10-20	96	11	5	4	116	23.01	68	15	4	2	89	19.56	205	21.37
20-30	87	20	5	2	114	22.61	103	10	4	-	117	25.71	231	24.08
30-40	59	12	3	-	74	14.68	48	9	2	2	61	13.40	135	14.07
40-50	43	3	-	1	47	9.32	15	4	-	-	19	4.14	66	6.88
50-60	19	2	2	1	24	4.76	13	4	2	-	19	4.17	43	4.46
60-above	11	4	-	-	15	2.97	5	3	-	-	8	1.75	23	2.39
Total	416	61	18	9	504	100.00	378	54	16	7	455	100.00	959	100.00

middlemen engulf the fruits of production.

TABLE - III

NUMBER OF DEATHS BELOW 5 YEARS

No.	Groups	Male		Female		Total	Percentage
		No.	Percentage	No.	Percentage		
	A	9	23.68	29	76.31	38	90.47
	B	1	25	3	75	4	9.52
	C	-	-	-	-	-	-
	D	-	-	-	-	-	-
tal		10	23.80	32	76.19	42	100.0

Table-III reveals the number of deaths below the age of five. It is found that about 76% of the children died in this age group are females and only about 24% of them are males. This reveals the high incidence of deaths of female children in the fishermen community. Another interesting factor is that there is not even a single incidence of death in the age group of children belonging to groups 'C' and 'D' i.e. Merchants-cum-money lenders and money-lenders-cum-middlemen. Among the children who died in this age group, about 90% of them are from the group

'A' i.e. artisanal fishermen and about 10% of them are from group 'B' i.e. the modern fishermen. The high incidents of female children's death makes us to think that the female children are not given adequate care and concern as pompared to male children. Since the nature of this occupation i.e. fishing is ventured by the male members of the family, there are more reasons to believe that the male children are given more attention. Enenthough the sex bias need not be a necessary condition for this factor, it is a known phenomena in the village that the fishermen families like the agrarian families long for male children and they are proud of having more male children. Since there are no incidence of child death in the group 'C' and 'D', which are more economically well-off than the other two groups of fishermen, we tend to believe the view that the material security guarantees the survival of children.

B) EDUCATIONAL STATUS

One of the variables taken in this study for the purpose of understanding the well-being of fishermen is their educational status, because educational level is also an indicator of the level of social development in the community (Nayar, 1983). The study village is haunted with the low level of education as we find that among the parents, 76% are illiterate.

The situation is more glaring when we analyse the educational status of children. The tables IV and V give the educational status of the children which is calculated for the whole group and not according to each group of fishermen.

TABLE IV

EDUCATIONAL LEVELS OF SCHOOL/COLLEGE GOING CHILDREN

Class	School going children				Total	Percentage
	MALE		FEMALE			
	No	Percentage	No	Percentage		
Primary	46	42.59	62	57.40	108	65.06
Secondary	15	41.66	21	58.33	36	21.68
High Sch.	4	36.36	7	63.36	11	6.62
Hr. Sec. School	2	25.00	6	75.00	8	4.81
College/ UG/PG	1	33.33	2	66.66	3	1.80
Total	68	40.96	98	59.03	166	100.00

From Table IV, we find that among the school going children the female children form the majority as about 57% of them are going to primary school and about 58% and 63% of them attend Secondary and High School respectively. It is also true in the case of children attending higher secondary school and colleges as seen in the table. The majority i.e. about 65% of children attend primary school & only about 22% of them attend Secondary School. The children attending High School,

Higher Secondary school and college are only 7%, 5% and 2% respectively. In this table we derive mainly two inferences viz. the children attending school/college are mostly females and the number of children is decreasing as the level of education is increasing.

In a particular family which the investigator has visited, the head of the family is educated upto class VIII. He has only three daughters and all the three are educated. The first daughter has completed B.A. and is married. The second one has completed B. Com and teaching in a high school while persuing M. Com by correspondence course. The third daughter is continuing her higher secondary school final year. According to the opinion of this father, the parents are the main motivating factor for their children's education and they should give a lot of impetus to their children's education. It may be a convincing reason, but it is not the real one because the unwillingness of the parents to send their children to school/colleges, cannot be attributed as the main cause for their children's illiteracy. Many parents expressed that the type of occupation they were enagaged, demand the help of the male children who lose the privilege of education. Inspite of their helplessness, they are aware of the value of education and the social status and the prestige enjoyed by the above mentioned educated family. At the same time they

are also sceptical about the job opportunities which their children would enjoy after completing the studies. While nature is delimiting the privilege of the educationof male children, the existing exploitative practices exercised by the merchants and middlemen take away even the little privileges they have for education, as these practices deprive the fisherman's right to equal share of what they produce.

TABLE - V

NUMBER OF DROP OUTS IN THE SCHOOL

S.No.	Class	Number of Drop outs				Total	%age
		Male		Female			
		No.	%	No.	%		
1.	Primary	173	62.68	103	37.31	276	77.31
2.	Secondary	30	50.84	29	49.15	59	16.52
3.	High School	4	36.36	7	63.63	11	3.08
4.	Higher Sec. School	2	18.18	9	81.61	11	3.08
Total		209	58.54	148	41.45	357	100.00

In table V, we have seen the number of children attending school. But in table-V, we find the alarming drop-out cases in the fishermen community. As many as 77% of the students

drop out in the primary school itself and about 17% of them in the secondary school. Only about 6% of them reach high school and higher secondary school. It is also found that more male children leave the school in their early age than the female children. Among the children who drop-out in Primary School, about 63% of them are male. Among the children who reach high school and higher secondary school, the female children form the majority. But by the time they reach higher secondary school, the drop out rate is very high as all of them leave their education. The devastating droup-out rate in fishermen community is presented in the following pie-chart.

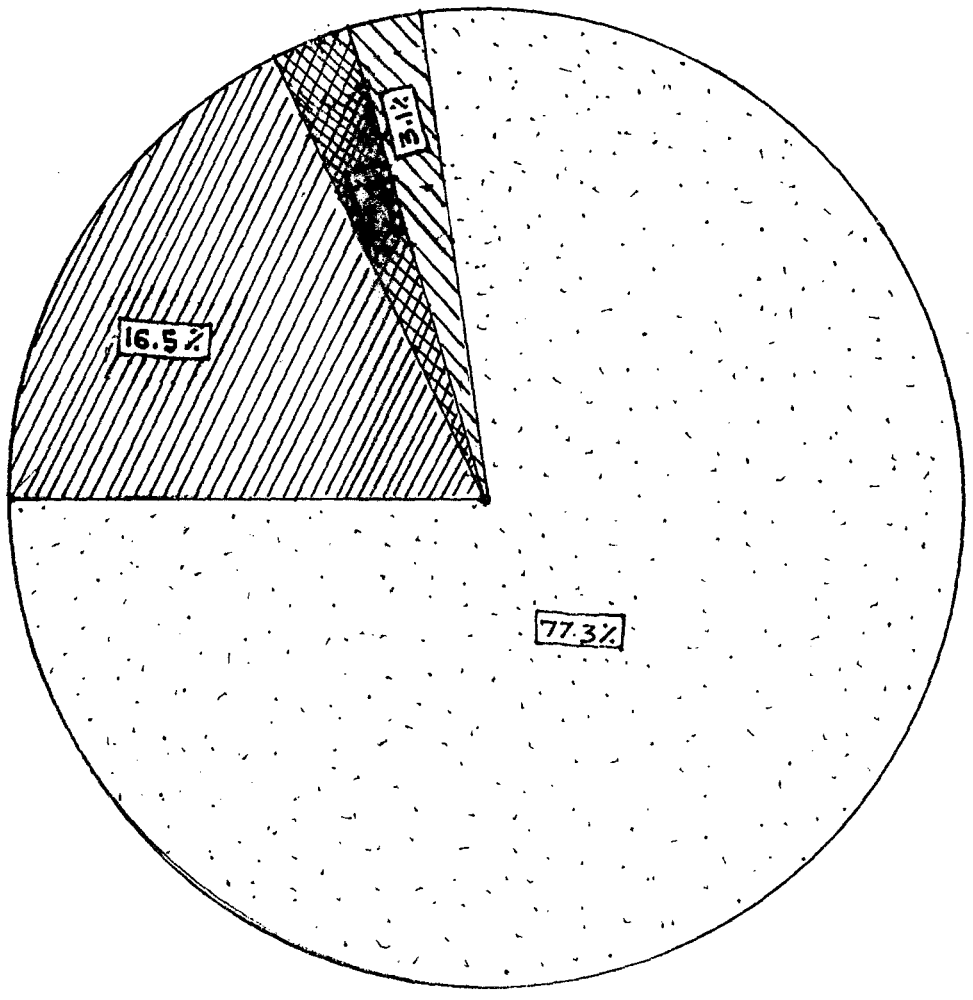

Fig.5

Pie-Chart showing the student's drop-out Rate in Fishermen Community.

As we have already mentioned, the main reason for the male children becoming the victims of illiteracy is the fishermen's need for male children to assist them in their occupation. Unlike the agrarian structure, in the fishing communities, the female children is sent to school as their mothers are at home to look after the aiblings. The womenfolk do not have to go for work as the women in the agrarian sector. The educational status of girls is related to the dehumanising dowry system prevailing among the fishermen communities. In some cases the educated girls are wedded with less dowry and in other cases the rate of dowry goes high according to the high educational status. This is because, the bride's parents go in search of grooms who are equally educated from wealthy families who demand dowry according to their economic status.

Education does play an important role in the social status and the development of fishermen. There is a vicious circle between the educational status and the development of fishermen. That is, the fishermen fall prey to the exploitation of merchants and middlemen because of their low level of education and this exploitation which limits the growth of fishermen's development does not give fishermen their right to education.

The educational facilities available in this study village are disheartening. There is no proper school in the village. The primary school which is existing in the village is a thatched one with no flooring. Benches, tables and chairs are not available. Since this school is not yet recognized, only seven children attend the school who are taught by three teachers. These teachers are not paid any salary, but they are given only T.A. by the 'Blue Sea Education Movement' which is under the control of Kottar. There are four schools in Kanyakumari Town and out of which three (one primary school, one high school and one higher secondary school) are run by the Catholic Chruch. The other school is a public school. There is a government middle school which is near the study village. But in this school mostly the children of Nadar Hindu community study. The children of this study village have to walk at least 3-4 kms up and down to receive education. The religious fanatirism is prevailing in these schools as they give preferences to students belonging to their respective religion. Education which is a fundamental right, is contemptuously reproached by ruthless religiosity, casteism and recism. Education, which is a nucleous of conscientizing the oppressed fishermen to liberate themselves and raise against oppression, is becoming the pedagogy of the oppressors who monopolise the entire education andleaving the fishermen to be the victims of colossal illiteracy.

C) HOUSING CONDITIONS

One of the factors influencing the well-being of fisherman is the availability of housing. Housing is also a symbol of social recognition and prestige. The problem of housing faced by the fishermen is not merely a physical one but one of the symptoms caused by the overall deprivation. Constructing more houses is not a solution unless the complex variables affecting the life of fishermen are also taken care of.

The houses in the study village are classified under four categories/groups :

Group - I : This group consists of houses with more than three rooms with tiles or concrete roofs, walls which are built by rocky stones/sandy stones/burnt bricks and plaster, flooring with smooth cement, tiles or mosaic.

Group - II : The group II consists of houses with three rooms or below. The meterials used for roof are palm or coconut leaves and the materials used for wall and floor are as mentioned in group-I.

Group-III : The houses with two rooms with concrete roofs walls built by burnt bricks and plaster and the flooring with smooth cement form group-III. These type of houses are

provided by the government of Tamilnadu.

Group-IV This group consists of thatched houses i.e. the materials used for roof, and wall are palm/coconut leaves and the flooring with low-dung.

From table VI, we find the gross disparity of ownership of houses existing in the village of Kumarimuttom. Among the artisanel fishermen, only about 2% own houses of Group I, wherelse all the households of group 'C' and 'D' own houses of group I. The group III type houses are mostly owned by artisanal fishermen as about 78%, of them have such houses. Thus only about 13% of the households have accessibility to houses of group-I and these households are none but the modern fishermen, merchants and the middlemen. The merchants and the middlemen who are not directly involved in actual fish production have good housing facilities.

The housing culture of fishermen is related to their occupation. The houses in this village are built near the sea so that the fisherman could have easy accessibility to sea while going for fishing. In order to protect these houses from sea moisture and other particles, they have used strong wood and iron materials. But now the cost of such material

TABLE VI

THE TYPE OF HOUSES OWNED BY DIFFERENT GROUPS OF FISHERMEN COMMUNITY

N in parenthesis

S.No.	Groups of Houses	Groups of Fishermen Community								Total	Percentage
		A(129)		B (15)		C (5)		D (3)			
		No.	%	No.	%	No.	%	No.	%		
1.	I	2	1.55	10	66.66	5	100	3	100	20	13.15
2.	II	5	3.87	2	13.33	-	-	-	-	7	4.60
3.	III	101	78.29	3	20.00	-	-	-	-	104	68.42
4.	IV	21	16.27	-	-	-	-	-	-	21	13.81
Total		129	100.00	15	100.00	5	100.00	3	100.00	152	100.00

A= Artisanal Fishermen

B= Modern Fishermen

C= Money-Lenders-cum-Fish Merchants

D= Money-Lenders-cum-Middlemen.

have gone so high that they are unable to build houses which could with stand the damages caused by the physical environment. There is a conglomeration of houses existing in this village. As a result the interpersonal and social relationship between each household is very deep and close, eventhough at times it causes petty quarrels. An exchange of cooking utensils and other goods also take place so vividly in this village. Becuase of such a closeness that exist between the houses, there is very little happanings in one house that are unnoticed or unfelt by the surrounding houses.

Every household from the artisanal fishermen expressed the need for having houses of group-I. At the same time they are also aware of their inability to procure such houses due to various reasons. One of the main reasons is that the value they receive for their hard labour is so little that they cannot have enough money to have such houses. Secondly, they cannot expend their village area to provide enough place for building more houses because the village is surrounded by sea at one side and by coconut groves of Nadar Community at other side.

The table VII explains the magnitude of the poor housing conditions in which the fishermen live. This table reveals that the number of rooms per person in this village is only 0.35%. But this is not the case with the households

of group 'C' and 'D' which are the affluent classes in this village. They have atleast one room per person. The house provided by the government has only two rooms each. The average family size of artisanel fishermen, who live in such houses is 6.3 from this we can understand the gravity of the problem. The fishermen's need for better housing is not met by the government inspite of the government's professed plans to improve the housing conditions of fishermen. The fishermen are also not able to meet this need due to the prevelence of economic deprivation they face in their day to day life which prevents them from fighting for their rights.

The table VIII gives the availability of electricity in the houses. About 63% of the houses have electricity connection. But among the houses owned by artisanel fishermen only about 58% of them have electricity. The Group III houses, were initially all given electricity connection. But now only about 64% of them really get electricity. When the investigator visited the houses he found out the innocuous ways of wiring in these houses. The houses of group 'C' and 'D' fishermen are all electrified.

Except the merchants, middlemen and some of the modern fishermen, the artisanel fishermen hardly own any wooden furnitures like benches, chairs, tables etc. The fishermen are

TABLE VIII

AVAILABILITY OF ELECTRICITY CONNECTION

N=152

S.No.	Groups of Houses	Groups of fishermen community								Total			
		A		B		C		D					
		Yes	No	Yes	No	Yes	No	Yes	No	Yes	%	No	%
1.	I N=20	2	-	10	-	5	-	3	-	20	100	-	-
2.	II N=7	4	1	2	-	-	-	-	-	6	85.7	1	14.28
3.	III N=104	67	34	3	-	-	-	-	-	67	64.42	37	35.57
4.	IV N=21	2	19	-	-	-	-	-	-	2	9.52	19	90.47
Total N=152		75	54	15	-	5	-	3	-	95	62.5	57	37.5

unable to avail of such luxuries in their houses due to their poor economic status. At the time of visits by guests and celebration of any ceremonies like marriages, puberty and first communion etc. they borrow furnitures from otners, especially from the merchants and middlemen.

Housing scheme is one of the programmes of the government of Tamil Nadu, provided to promote the well-being of fishermen. In the study village, the scheme was started in 1977 and about 60 houses were built. In 1982, 100 more houses were built. In our attempt to identify some of the problems the receipients of these houses faced, the following facts came to limelight. The president of the Fishermen Cooperative Society, who is known as the village headman, was partial towards the Paravas community while distributing the houses as he himself belongs to the same community. While the first batch of houses were distributed, Rs. 40/- was collected from emb household and similarly Rs. 100/- was collected at the time of distribution of second batch houses. The money was collected by the President in the name of village fund which could be spent for some common purposes in the village. But the fact is that no one knows where the money is.

Another problem is the poor and bad construction of the houses. The building contractors have used sea-water and the sand from the beach. As a result almost all the houses are

dilapidated, and the plaster has fallen down. In many houses the roofs have collapsed and the flooring is broken. Besides the cast bias, politics also did play a role as the families affiliated to the ruling party were given first preference while allotting the houses.

TABLE IX

OPINIONS EXPRESSED BY GROUP 'A' ON THE GOVERNMENT HOUSING SCHEME

S.No.	Opinions	Number	Percentage
1.	Positive (+ve)	26	25.74
2.	Negative (-ve)	63	62.37
3.	No opinion	12	11.68
Total		101	100.00

From the Table IX, we find that about 63% of the households of Group 'A' have negative opinion about this scheme, The reasons for their negative opinion are the same mentioned above, especially the poor construction of the buildings. Those who have positive opinion expressed that they have atleast a place to stay and they do not have to be affected much by rain and need not replace the roofs as in the case of

huts. These families also have high regards for the present ruling party in Tamilnadu, as they believe that, it is only after the advent of this party in power, they could get these houses.

(D) WATER SUPPLY AND ENVIRONMENTAL SANITATION

The main source of drinking water in the study village is the tap water which is supplied twice or thrice in a week. There are only seven water taps for the entire village of 227 households. Besides there seven taps, recently two more taps have been installed for the purpose of supplying regular water to the engineers and other officials who are involved in harbour construction in this village. These two taps are kept open for the public for few hours in a day.

Two of the modern fisherman families have water pipes attached to their houses and this facility is totally absent in the houses of the artisanel fishermen. But all the merchants and middlemen have such facilities in their houses. The amout of water supplied from the taps is too little that they are just sufficient for drinking and cooking purposes. For washing, the water is drawn from three wells in the village. The water in these wells is unprotected and unclean. At times, this water is used for bathing too. However during summer people have to walk for 5-6 kms to collect water.

The main reason for the insufficient quantity of water supply is the mushroom growth of lodges and guest houses in Kanyakumari town which is near to Kumarimuttom. These lodges and boardings have managed to win the support to authorities supplying water by bribe. As a result, a big quantity of water is first supplied to these lodges which cater to the tourists from the upper strata of society and only the remaining water is supplied to the village. The constant quarrels and fights between women at water taps is the outcome of this bias.

The state of environmental sanitation is so agonising that the village has become endemic to diseases like malaria and scabies. There are three waste tubs kept in three streets of this village. But the waste is seldom removed by the concerned staff. Hence the people throw the waste behind their houses and /or near the beach which has become a breeding ground for flies and mosquitoes. There are a few toilets and latrines built by the harbour authorities for this village. But they cannot be used as there is no water supply to the latrines. At the time of village feast the scavengers come to clean the village and they take money from the village for their service. The fishermen are not apathetic towards using water closets and taps. But their economic status prevent them to go for such facilities.

(E) HEALTH CONDITIONS

The study on the health culture of fishermen in the village of Kumerimuttom goes against the conventional approach. Health culture means; "the cultural perception of health problems, their cultural meanings and the cultural response to these problems, both in terms formation of various institutions to deal with various health problems and actual (health) behaviour of individuals or groups. " (Banerji, 1982). The conventional approach to the study of health culture of any community means that the people are primitive, resistant to accept new innovations in health and they continue to follow the traditional health practices. But this is not the reality. For instance, among Oraon tribes, it was found that considerable degree of unmet felt needs exist for western style of medical services and that when diseases affect them they make great sacrifices to gain access to practitioners or institutions of western medicine (Sahu, 1980).

In this study a comprehensive approach is advocated in order to understand the health conditions of fishermen who accept not only Indian medicine but also western medicine.

The table X gives the order of ranks given to six different diseases commonly prevalent in the study village,

TABLE X

RANK ORDER OF THE COMMONLY PREVALENT DISEASES

S.No.	Diseases	Order of Rank												Total
		1		2		3		4		5		6		
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	
1.	Diarrhoea	94	61.84	35	32.02	23	15.13	-	-	-	-	-	-	152
2.	Scabies	26	17.10	38	25	57	37.5	31	20.39	-	-	-	-	152
3.	Chicken Pox	-	-	-	-	-	-	12	7.89	70	46.05	70	46.05	152
4.	Measeles	8	5.26	12	7.86	36	23.68	88	57.89	8	5.26	-	-	152
5.	Polio	-	-	-	-	-	-	7	4.60	64	42.10	81	53.28	152
6.	Whooping cough	24	15.78	67	44.07	36	23.68	14	9.21	10	6.57	1	.65	152
Total		152	152	152	152	152	152	152	152	152	152	152	152	

by the surveyed households. According to this table, the most common disease as per the rank are (1) Diarrhoea, (2) Whooping cough (3) Scabies (4) Measeles (5) Chicken pox and (6) Polio. This table reveals that the children are the most effected group as they are easily prone to diarrhoea, scabies, measeles and polio. When the investigator met the Medical Officer at the Primary Health Centre, in order to get his opinion on the causes for the severe occurances of such diseases in this villages, he attributed the cause to the cooking practices and consumption of a particular fish i.e. anechovies, when the fishermen are forced to live in an environment which promotes worm infestation diarrhoea and scabies.

The distorted facts and views given by the medical officers and other health personnel make our planners to term the people as unhygienic and resistant to western medicine and to make plans which are aimed at changing people's attitudes and behaviour. As a result the root cause of the problem remain untouched and unaltered.

Before we analyse the types of medicines the fishermen seek for various diseases, let us throw some light on some of the health practices prevelent in the village and the roles played by two health institutions run by voluntary organisations and the government i.e. the Primary Health Centre.

Among the diseases for which the Indian medicine is widely made use of in this village is Jaundice. There are two healers for treating this disease. One healer, gives the patients a juice of a particular plant mixed with coconut milk. It is given only twice or thrice. The patients are asked to take both twice a day. Till they get cured. Some of the patients treated by such medicine expressed that it took just three or four days to get compiete cure. At the time of treatment the patients are asked to be under diet. Another disease which is treated by local medicine is chiken pox. The patient is given plenty of tender coconut water and he/she is asked to sleep on the sand with neam leaves. The common practice which is prevalent for treating diarrhoea is the drinking of "omam water" with honey. The people say that this medicine is effective. The trained village Dai also advocates this treatment. The bone setters are the most famous local healers in this village. There are two bone setters who are highly esteemed by the villagers. Thesetwo have received training from experts in martial arts known as 'Aasans'. These persons are known to be capable of making the opponents unconscious by either touching or hitting at a particular parts of the body. People say that they are also capable of bringing the unconscious persons to consciousness by touching a particular part of the body.

The bone setters are available not only in Kumari Mittom, but also in all the coastal villages of Kanyakumari district. The origin of such healers is related to the nature of occupation the fishermen are engaged in. The fishermen, while they try to push the cattamarams across the rough seas are hit by the cottamaromes or by the other fishing crafts, they get sprains or fractures in their body, especially the hands and legs. For instance, when a person's leg is fractured the bone setter first tries to join the broken bones. Secondly, with the help of another person he keeps few thin bamboo flat sticks around the fractured leg and ties them with long cloth. Then he applies a kind of oil which is concocted by him. The oil is applied on the affected part everyday. After a week the bamboo sticks are removed and another set of sticks are tied similarly. It is followed till the person is cured. One of the problems is the unbearable pain experienced by the patient while the treatment is given. Yet the people prefer such treatment, because it is less costly and saves time. For sprains, the healers give good massage and apply the oil. People from neighbouring villages and different caste and religion also come to this village for this treatment. The bone setters enjoy good social status and prestige in the village and they act as family counsellors because of their influence in the village.

One of the health institutions run by the voluntary organization is the Vivekananda Kendra Dispensary. It is run by Vivekananda Kendra Rock Memorial. It is situated inside the campus of Vivekanda Kendra which is very near to the study village. The patients are charged only paise 50 as a registration fee. No money is collected for medicine given except Re1/- which is charged when an injection is given. The investigator's visit to this dispensary reveals that it is frequented by many patients, especially from the study village. The Medical Officer and the other staff are paid by Vivekanda Kendra. According to the report of the Medical Officer, it has facilities to treat mostly the minor ailments and the major cases are referred to Government Hospital at Kanyakumari or Nagarcoil. It is a charity and service oriented institution. Even though the fishermen are all catholics, they expressed that they are treated without any religious bias when they visited this dispensary.

Community Health Development Programme (CHDP) is a project undertaken by Kottar Social Service Society (K.S.S.S.) in the year 1972. The main objective of this programme is to enstrust people's health in people's hand. In order to achieve this objective, it has adopted various means and methods. It functions at two levels - the one at the central level and the other at the community level. At the central level and the

other at the community level. At the central leve, it has three main functions viz. Animation, Training and Administration. At the village level it has Mahalir, Mandrams (Women's Association) comprised of village women, especially the mothers. This Mandram is also known as the village Health Team. This team has a community Health Guide (CHG) who has received one year training at government hospital organized by CHDP. The training covers the following subjects - Anatomy, Pharmacology, Micro-Biology, Nutrition, Home Garden, Mid wifery, Nursing procedures and social analysis. The CHG is selected from the local village and is paid by KSSS. The community Health Team has the following functions. They are Health Education, Immunization, Treatment for fever, diarrhoea etc and prepering Growth charts, prenatal, Ante-natal and Post-natal services for mothers, Nutrition demonstration and conducting village meetings for mothers to provide information about health problems. The CHDP also deals with the problems of drinking water, sanitation, transport, land ownership and other demands which are non-operative in the study village.

By March 1985, there were 115 Community Health Centres which are served by 85 Health Teams in Kanyakumari District, covering 35% of the district's population. This functions only on Tuesdays and Thursdays in the study village. The children

are given immunization and the mothers are given pre-natal and post-natal care. The CHG of this team is not from this village. But she is from another village as no one volunteered from this village for the one year training. Except the Polio vaccines, the other vaccines are procured from the Primary Health centre and given either at thePHC or at the Community Health Centres run by CHDP with the help of the health visitor from the PHC. But in this village the immunization programmes are carried out at the CHDP health centre and the service of the health visitor from the PHC is seldom rendered as they rarely visit the village.

CHDP is a project undertaken by the Catholic diocese of Kottar mainly for the Catholics. Since the PHC is not catering to the health needs of this village, the CHDP is exploiting this situation with a religious underpinning. The main interest of CHDP is to promote the health of Catholic Community and it is able to use the government health institutions for this purpose. This portend the failure of the government health institutions to provide services, establish report with the community and make the services physically accessible to people. It is because of these reasons that these Voluntary organizations come to the picture.

There are eleven Primary Health Centres functioning in Kanyakumari District. The study village comes under a PHC at Agasteeswaram which is about 7 km away. There are three Mini Health Centres under this PHC. The PHC served the population of 1,27,087. The following informations are gathered from the PHC. It has 15 maternity centres, 5 health supervisors, 12 male MPAW's and 18 female MPHW's and 10 health assistants, with regard to the performance of other programmes, only the family planning programmes are given more importance as the information board gives only the following details.

Targets fixed for sterilization I.U.D and users of conventional contraceptives in the current financial year are 1100, 800, and 800 respectively. The total number of acceptors of different family planning methods in the Block are, vasectomy, 795, Sadpinjectony 2346, I.U.D. 74 and oral pill 126. This information reveal the fact that the PHC is functioning mainly for the promotion of population control. Under the jurisdiction of this PHC the following are the numbers of private medical practitioners. Allopathy-21, Homeopathy-23, Ayurveda-8 and Siddha-1.

TABLE - XI

VISIT TO PRIMARY HEALTH CENTRE

S.No.	Group	Visit to PHC				Total
		Yes		no		
		No.	%	No.	%	
1.	A	16	12.40	113	87.59	129
2.	B	2	13.33	13	86.66	15
3.	C	-	-	5	100.00	5
4.	D	-	-	3	100.00	3
Total		18	11.84	134	88.55	152

From the table Xi, we find that about 88% of the surveyed households never visited this PHC. Among the fishermen belonging to group 'A' and 'B' only 13% of each group have visited the PHC. The other two groups 'C' and 'D' never visited this PHC. The reasons for not visiting the PHC are not only the distance between the PHC and the study village, but also the availability of other health institutions near the village. Perhaps, the people might have taken the trouble of visiting the PHC IF the other health institutions are absent in the village.

The majority of the village people do not know about the female MPHW from the PHC who is supposed to visit this village as she seldom comes to the village because of her preoccupations with family planning programmes. When the investigator met her at the PHC, she said, "we the MPHW's here have to bring a few cases for sterilization in a month. The authorities here are satisfied if we fulfil our targets. If we turn our attention on other health problems and not on family planning, we are not appreciated for our work". This PHC is one of the best PHC in Kanyakumari district according to the officials. But this is the state of functioning of the best PHC. Family welfare means only family planning.

According to table XII, about 28% of the families have undergone sterilization. The sex difference among the persons who have undergone sterilization is very glaring. Among the persons who have undergone sterlization only 14% are male and the remaining 86% are female. Since the males are the earning members and they have no time to spare, the female members are forced to go for sterilization. In group 'C' and 'D' 3 and 2 female members have undergone sterilizatic respectively. This is due to their economic security which gives them the feeling that they can bring up their limited number of children in a normal and healthy environment.

TABLE XII

NUMBER OF FAMILIES UNDERGONE STERILIZATION

S.No.	Groups	Sex and Place								Total	%	Percentage to grant total N=152
		Male				Female						
		Pvt. Hosp.	Govt. Hosp.	No.	%	Pvt. Hosp.	Govt. Hosp.	No.	%			
1.	A N=129	2	3	5	3.87	5	23	28	21.70	33	76.74	21.70
2.	B N=15	-	1	1	6.66	2	2	4	26.66	5	11.62	3.2
3.	C N=5	-	-	-	-	3	-	3	60.00	3	6.97	1.97
4.	D N=3	-	-	-	-	2	-	2	66.66	2	4.65	1.31
	Total	2	3	6	13.95	12	25	37	86.04	43	100.00	28.28

In the table XIII the perceptions of different diseases by the fishermen families given. It is learnt that they are able to perceive almost all the symptoms and they are able to know the diseases which the patient is suffering from. In this study the symptoms of four diseases viz. Malaria, Cholera, T.B. and Jaundice and asked from the surveyed households separately for each disease. For instance, in the case of Malaria, the first two symptoms viz. fever and rigor are known to all the fishermen families. From this table we can conclude that the fishermen are aware of the symptoms of such diseases. Hence, it is obvious that when such diseases occur, they will not remain inactive, instead they would seek treatment whatever is accessible and available to them. The incidence of Cholara is completely nil in this village and there are a few cases of Malaria, eventhough Malaria is controlled to a large extent in Kanyakumari district (Hande, 1985).

The health culture of fishermen can be fully understood only when we know what measures they take and what kind of medicines they seek at the time of illness. The following tables XIV and XV will reveal this. Table XIV shows the type of medicine they would seek and table XV shows the type of medicine they sought when they were affected by certain diseases.

The table XIV reveals the type of medicine the fishermen families are seeking for different kind of diseases. From this table it is clear that for common fevers, about 73% of them would go for western medicine and only about 27% of them would seek Indian medicine. The diseases for which the fishermen seek western medicine are Ulcer, T.B., Appendicitis, Whooping Cough, Scabies and Diarrhoea as the percentages of families seeking western medicine for these diseases is more than the families seeking Indian medicine. However, we cannot come to the conclusion that they prefer western medicine to Indian medicine from this table. For this purpose, we have to see the type of medicine they sought, for different kinds of diseases which affected them, from different health institutions that are available to them. This is shown in the table XV.

Usually the medicine given at CHDP, health centre, Vivekananda Kendra Dispensary, Govt. hospitals and the Private Hospitals are allopathic. In the tableXV it is shown that for diarrhoea which is a common disease, about 35% seek treatment from CHDP and about 21% of them go for Indian medicine. Similarly 31% of the cases of scabies are treated with Indian medicine and the rest are treated at places where allopathic medicine is given. However, most of the cases of Jaundice, chicken pox and Measeles are treated by Indian medicine.

Table-XIII

Perceptions of the symptoms of the diseases

Group of Families	Diseases and Symptoms perceived by Families												
	Malaria				Cholera			T.B.			Jaundice		
	Fever	Rigor	Burning hot	Headache	Profuse Diarrhoea.	Muscular cramps	Vomiting	Severe cough	Continuous fever	Chest pain	Fever	Yellow eyes	Urine yellow
A N=129	129 (100)	129 (100)	32 (24.80)	61 (47.28)	129 (100)	35 (27.13)	129 (100)	129 (100)	43 (33.33)	57 (44.18)	84 (65.11)	129 (100)	129 (100)
B N=15	15 (100)	15 (100)	10 (66.66)	12 (80)	15 (100)	11 (73.33)	15 (100)	15 (100)	12 (80)	12 (80)	13 (86.66)	15 (100)	15 (100)
C N=5	5 (100)	5 (100)	2 (40)	2 (40)	5 (100)	3 (60)	5 (100)	5 (100)	3 (60)	4 (80)	4 (80)	5 (100)	5 (100)
D N=3	3 (100)	3 (100)	1 (33.33)	2 (66.66)	3 (100)	1 (33.33)	3 (100)	3 (100)	3 (100)	2 (66.66)	2 (66.66)	3 (100)	3 (100)

(Figures in parenthesis denote percentage)

Table-XIV

Families Seeking Different Kinds of Medicine

Diseases	Medicine Sought by Different Groups											
	Indian Medicine				Total	%age	Western Medicine				Total	%age
	A N=129	B N=15	C N=5	D N=3	152	100	A N=129	B N=15	C N=5	D N=3	152	100
Fever	33	6	1	1	41	26.97	96	9	4	2	111	73.02
Diarrhoea	40	5	1	1	47	30.92	89	10	4	2	105	69.07
Scabies	46	2	2	1	51	33.55	83	13	3	2	101	66.44
Chickenpox	85	3	1	-	89	58.55	44	12	4	3	63	41.44
Measles	82	1	-	-	83	54.60	47	14	5	3	69	45.39
Jaundice	107	11	3	1	122	80.26	22	4	2	2	30	19.73
Ulcer	14	1	-	-	15	9.86	115	14	5	3	137	90.13
T.B.	9	2	-	-	11	7.23	120	13	5	3	141	92.76
Appendicitis	-	-	-	-	-	-	129	15	5	3	152	100.00
Whooping cough	20	5	1	1	27	15.78	109	10	4	2	125	82.23
Sprain/ Dislocation of Bones.	121	11	1	1	134	88.15	8	4	4	2	18	11.84

Table-XV

Families Affected by Different Diseases and Their Places of Treatment (N=152)

Diseases	Family Affected		Places of Treatment									
	No. (Total)	%age	CHDP		V.K.D.		Govt. Hosp.		Private Hosp.		Local Medicine	
			No.	%age	No.	%age	No.	%age	No.	%age	No.	%age
Diarrhoea	72	47.36	24	33.33	11	15.27	12	16.66	10	13.88	15	20.83
Scabies	38	25.00	9	23.68	6	15.78	4	10.52	7	18.42	12	31.57
Measeles	19	12.50	3	15.78	2	10.52	-	-	4	21.05	10	52.63
Chickenpox	17	11.18	-	-	-	-	-	-	7	41.17	10	58.62
Jaudice	12	7.89	-	-	-	-	-	-	3	25.00	9	75.00
[illegible]	3	1.97	-	-	-	-	-	-	3	100.00	-	-
[illegible]ver	12	7.89	-	-	-	-	4	33.33	8	66.66	-	-
Appendicitis	4	2.63	-	-	-	-	-	-	4	100.00	-	-
[illegible] Cough	47	30.92	32	65.30	9	19.14	2	4.25	4	8.51	-	-

Thus we can conclude that the fisherman make use of both the systems of medicine and the are not restricted to the use of only one by of medicine. The desire for accepting a particular kind of medicine is rational according to their accessibility perceived effectiveness and availability. For instance in the case of sprains and fractures, the bone setters are perceived as the most effective and they are readily available to the community. Similarly, people think that Jaundice can be effectively cured by using the herbs which are available in their locality.

(F) FOOD CONSUMPTION

'Fish contains plenty of protien' may be a correct statement, but it is not a complete statement as the fishermen are deprived of fish protein. One gets a dubious and wrong notion that fishermen eat plenty of fish. But the tragedy is that the widespread prevalence of protein pilferage by the local merchant class and the mulinationals, has made the fishermen to be the victims of malnourishment and calorie deficiency. This may be because neither the fish they catch is consumed by them in sufficient quantities nor they are in a position to eat adequate amount of rice and tapioca.

Many social scientists have related measurement of poverty to calorie and protein intake. Eventhough it is still under

dispute, the degree of poverty can be understood to some extent if we apply the criteria of number and the type of meals they consume (Banerji, 1982). The food which is commonly consumed by fishermen is rice and tapioca which contain only starch. The quantity of rice, consumption depends on the income they get every day. The fishing seasons are such that only for 3 or 4 months in a year the fishermen are able to catch more fish and earn more money. During lean seasons, they have to borrow money from the money-lenders for their subsistence. As a result they are unable to eat three meals in a day throughout the year. Therefore, most of the fishermen are content with only one meal a day most of the time.

"Protein for the masses is a proposition of basically catching more fish of the smaller, less fleshy, bulk quantity species it means more anchovies, saradines and ribbon fish "(Kurien, 1979). The modernization of fishing has made such an impact that there is a high degree of depletion of resources. Secondly, the high price and increasing demand for shrimps have propelled the fishermen to go for catching fish with export potential. Thus, the depletion of resources and the market demand for shrimps have resulted in the fishermen eating less of the product that they produce.

The food consumption pattern reflects the poverty of fishermen. Depletion of sea resources has resulted in less quantity of food consumed by fishermen which in turn results

in catching less quantity of even the limited amount of fish available in sea. Thus the intensity of fishermen's poverty is ever increasing at the same time the merchants always prosper at the cost of fishermen's poverty.

(G) ROLE OF GOVERNMENT AND VOLUNTARY AGENCIES :

(a) The Role of Government

The government of Tamilnadu has eleven schemes for the welfare of fishermen. They are :

1) distribution of merchanised fishing boats;
2) inland fisheries development scheme;
3) astuarine fishermen's development;
4) ice-plant-cum-cold storage;
5) Provision of vehicles for quick transport facilities;
6) formulation of fishermen cooperative societies;
7) Housing schemes;
8) acquisition of land to rehabilitate fishermen;
9) relief to the fishermen;
10) protection from sea erosion and
11) guidelights and approach roads.

Besides these, the T.N. Government has started giving Rs.10,0 to the fisherman's family, who die in the sea. There is also

another scheme called 'Drought Relief Fund'. The agencies involved in the implementation of these schemes besides the Directorate of Fisheries are HUDCO, TAHDCO and NCDC.

Eventhough not all the programmes are implemented, there are many problems faced by the fishermen while getting benefit through these schemes. In the case of Drought Relief Fund, the poor fishermen are given Rs.3000/- out of which Rs.1000/- is given as subsidy. In order to get this amount each beneficiary has to deposit Rs.1000/-. Since most of the fishermen are not able to get this big amount, the money lenders give this amount with exhorbitant interest. The amount Rs.3000/- is not given in cash but in kind mainly in the form nylon threads or nets and the quantity of thread given to them is less than what they are supposed to get. The problem of government housing schemes is already discussed. When the lok Sabha Estimate Committee paid a visit to coastal villages in Kanyakumari district the committee members were taken by the local government authorities to only two villages, where the houses are newly built.

A new fishing harbour is built in this village at the cost of Rs.7.63 crores. The construction work started in 1984 and it is to be completed by 1988. There are two sea protection walls built in the sea. The total circumference of the harbour

is 8.87 hectores. This harbour will accommodate 250 boats and 1000 cattamarns. The harbour is supposed to provide the following facilities viz. safety measures for boat and catamarans, facility for ice, fuels, safe drinding water, electricity, roads and drying and curying. We have to wait for the completion of the harbour in order to challenge such facilities. One of the main problems faced by the fishermen in this village is the beach lending facilities for cattamarans which are occupied by the habour.

When the sea-protection walls are completed the fishermen have to cross these walls in order to set sail. This means they have to waste their time and energy in trying to cross this place to set sail. As a result they may not reach the fishing spot in time. Similarly, when they come back after fishing, they are so tired that they cannot use their manual force in rowing. The fishermen also are afraid that there may be more violences between boat owners and cattamaram owners as there will be more boats in this village after the completion of the harbour. They also foresee that they may not get fair price for their catch as mechanised boats would out-wit their catch.

(b) The Role of Fishermen Sangams and Kotter Social Service Society (K.S.S.S).

KSSS is a registered society run by diocase of Kottar. Its Director is a Catholic priest. This society has initiated the

fishermen to form Sangams (Associations) with a view to liberate the fishermen from the clutches of merchants and middlemen. In 1974, the first young fishermen Sangam was started in a Coastal village called Manakudly. At present the Sangams are operating in 16 coastal villages. The fishermen who become the members of the Sangam have to sell the fish directly to the Sangam which markets fish. The sangam takes 3% of the total catch out of which 1% is taken for the service charges and the remaining 2% is kept as compulsory saving for the fishermen. The saving is kept to build up the share capital of Rs.500/- Depending on the amount of share capital each person has, he can take loan from the Nationalised Banks through the Sangam. But everyday 10% is taken by the Sangam to repay the loan.

Since this Sangam is not existing in the study village, the investigator studied another village where the Sangam is operating. The name of this village is Keela Monakudy. It has 44 members out of which only 24 are selected on the basis that they have been members for atleast two years. They expressed said that since they joined the Sangams, they could take loans from the banks and the loans are also repaid immediately. All the 24 members expressed their opinion that they are now free from the clutches of merchants and middlemen. The profit is equally [illegible]

after the advent of Sangam. However, merchants are in constant conflict with the members of the Sangames.

The Sangam has helped the fishermen to unite themselves to fight for their social justice, equality and freedom.

c) Social Education for Development (S.E.D.)

Eventhough the study village does not have the fishermen Sangam of (K.S.S.S.) there is another Sangam called the "Association for the Protection of Fishermen's Rights" which is organized by S.E.D. It is supported by All India Catholic University Federation (A.I.C.U.F.). The Secretary and other office bearers working for S.E.D. are those who wanted to become priests but did not. There are 38 Sangams of S.E.D. operating in coastal villages. The main objective of this organization is to create awareness among the fishermen to fight for their own rights and privileges. They strongly believe in social action and try to unite all the fishermen in Tamilnadu. They mobilise the fisherfolk and lead them in procession to respective government departments or 'Dharna' in front of collector's office or Directorate of Fisheries etc. They take up legal issues related to fishermen, especially the fishing Regulations Act etc. and also other demands like water supply, housing, electricity and transport facilities etc. However, these Sangams, while demanding for their rights from the government do not play much role in relieving the fishermen from

the oppression by the merchants and middlemen.

In the study village, this Sangam was started in 1980. But it was not functioning well till 1983 due to some internal conflicts arising out of caste differences. After 1983, the members became united and the Sangam was again rejuvenated. The Sangam has a President, a Vice-President, a Secretary and a Treasurer. The members are mostly youth. So far they have succeeded in getting due services, water supply and roads in the village. At present, they are dealing with the problems faced by the village due to the construction of a new harbour.

Since the inception of these Sangams the fisherman are aware of the facilities they are entitled for and the problems created by merchants and middlemen. The gravity and severity of fishermen's problem is such that solving them at the local level will only be a temporary relief as their problems arise out of the social and economic relationships existing in the fishery sector. Hence the well-being of fishermen cannot be promoted as long as the development of fisheries follow the capitalist path. The efforts taken by the fishermen to relieve themselves from the bondage of human oppression and exploitation is negligible and they are only in the infancy. The class relationships that is existing in the fish economy make them suffer due to ill-health, non-availability of basic needs, oppression and bondage and they fail to surmount the forces that perpetuate these relationships in an effective manner.

CHAPTER-VI

D I S C U S S I O N

CHAPTER VI

D I S C U S S I O N

In the preceding chapters, the different components of modernization of fish economy and the status of the well-being of fishermen at Kumari Muttom are explicated. Although the interconnections between the modernization of fish economy and the well-being of fishermen are discussed along with the explication, in this chapter an attempt is made to project the impact of modernization of fish economy on the well being of fishermen with suitable selected illustrations from the earlier chapters. This study illustrates how the existing production relations and the consequent onslaught of alien technology has affected the well-being of fishermen.

THE MODERNIZATION AND IT'S IMPACT ON THE WELL-BEING OF FISHERMEN

The well-being of fishermen largely depends on the quantity and quality of the product they produce and this is determined by the production relations that exists in fish economy. In the preceding chapters we have seen that the type of production relations that exist in fish economy is explitative i.e. the productive capacity of the actual producers is exploited to the maximum for the prosperity of a few as the value of the product is not enjoyed by the labourers. The well-being of fishermen is measured against their right to own material resources and their privilege to

enjoy what they produce. But they are deprived of these two factors to a large extent by the destructive forces exerted by the merchant capitalist class at the local and national level who have links with the multinationals.

The productive capacity of the fisherman is not given its due merit mainly due to the following reasons. Firstly they are not able to make use of their productive capacity to the full because the catch they get is very minimum as their is an increase in the depletion of sea resources. Secondly, the price or the value they receive even for the small catch of fish is very less because of the mechanisms devised by the merchants and middlemen. Thirdly, the merchants and the middlemen reap the benefit out of the products that the fishermen produce with their hazardous and hard labour. In a way this also has tremendous impact on the fish consumption by the community at large as the depletion of resources and the export strategies limit the inflow of cheap and nutritious varieties of fish to the market. This is because of the path of development which the Indian fisheries is following in the name of modernization of fish economy.

The modernization process is the outcome of the increasing demand from the multinationals of the capitalist

countries like Japan and USA for fish especially of shrimps. In order to meet their demands fully, the developed na tions introduced mechanisation in fishing. But this mechanisation has made the supply less as it led to over-fishing. Since the demands are not fully met, there is an increase in the mechanisation process as it aims at exploiting all the unexploited and under exploited areas. On the one hand the mechanisation has resulted in the depletion of sea sources and on the other hand, the mechanisation process is always on the increase. More and more advanced fishing technologies are introduced in orderto catch more fish. This inverse relationship is going to increase the miseries of fishermen as their catch is going down.

Thus the higher the demand from the developed countries, the higher the depletion of sea resources of the developing countries. It is also the increasing demand of the developed countries that has resulted in market investment by the multinationals through the help of capitalist merchant class in the developing countries. The following figure 2 explains the cyclical process between the demand of the developed countries and the miseries of fishermen in developing countries. This cycle also explains the interlinkages between the marketing system and technology which is already explained in the proceeding chapters.

DEPLETION OF SEA RESOURCES Vs. MISERIES OF FISHERMEN

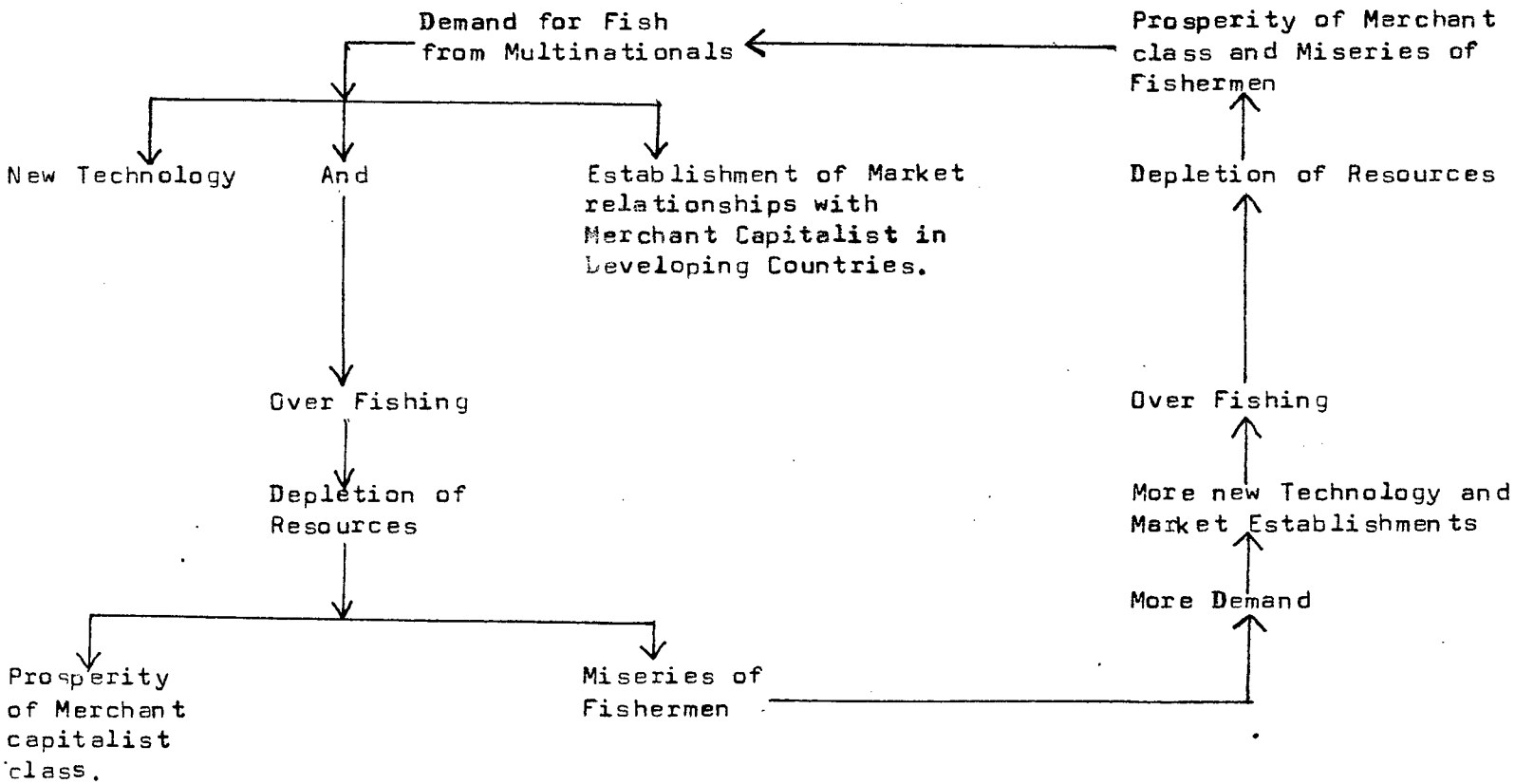

FIG. 6

In the study village the production relations in fish economy is determined by four main factors, viz the ownership pattern, the credit system, the marketing system and the technology used by fishermen and the resource base in the sea. The advent of mechanization has created a conflicting class structure in this village between the three categories i.e. the artisanal fishermen, modern fisherman and the merchants and the middlemen. This is mainly because of the pattern of production relations in fish economy. The conflicting class structure arises only in such a form of production relations.

These classes are always competing with each other in process of accumulating more wealth. In the struggle, only the merchants and the middlemen who have links with the other merchant capitalist class which saves the interest of the multinationals, prosper at the subjugation of the actual producers i.e. the fishermen. The right to ownership of wealth/ assets play a dominant role in the production process in fishing. The existing gross inequality in owning fishing crafts and gears by the fishermen is such that they are not able to get more catch. Depletion of sea resources in the sea is a general trend. But the advantage of mechanised boats is that they can venture out in to the open seas much more than the artisanal fishermen and therefore able to catch more fish.

The productive forces in fishing also largely depends on the technical knowledge and skills of the fishermen. It is the technology of the fishermen which aids the production process. But the productive capacity of the fishermen is not given its due importance when the fish is marketed. At this juncture the credit and marketing structure plays a dominant role. The fishermen remain as the mere receipients of the value which is determined by merchants and not by the producers. The whole production is valued according to the credit and marketing structure and not according to the productive forces of fishermen which included mainly their technical knowledge and skills in fishing.

Thus in the production relations of fish economy of this village, eventhough the technology of artisanal fishermen plays an important role, it is subdued by the other forces such as the credit and the marketing structures. The interlinkages between ownership pattern, credit pattern credit pattern, marketing structure and the technology of fishermen do control the production relations in fish economy. But among these four components the interlinkages between credit and marketing structures take an upper hand. As in the case of agrarian structure, in fish economy also, the

labour is not given the due share. But the difference is that unlike the agrarian economy, the fishermen to a large extent, apparently also owns the production at the same time acting as labourers. It is the extraneous forces such as marketing and, credit systems which impinge on the production process to deny the fishermen of the real ownership of production.

The marketing system, the ownership pattern and the credit system are so intrinsically interrelated that they do not function in isolation. It is such a system of multiple bondage and interlinkages that keeps away majority of the fishermen from receiving their real value of the product. The figure 3 explains the impact of the modernization of fish-economy on the well-being of fishermen.

In the study village the miserable status of well-being of fisherman is due to the advant of modernization of fish economy. Illiteracy is widely prevalent. The health conditions of the community, especially of women and children are poor. Even the fish they catch are not consumed by them because of the bondage of credit system which has created an object dependency over the merchants and the money-lenders. The houses they live are unfit for human habitation. Even

MODERNIZATION OF FISH ECONOMY AND THE WELL-BEING OF FISHERMEN

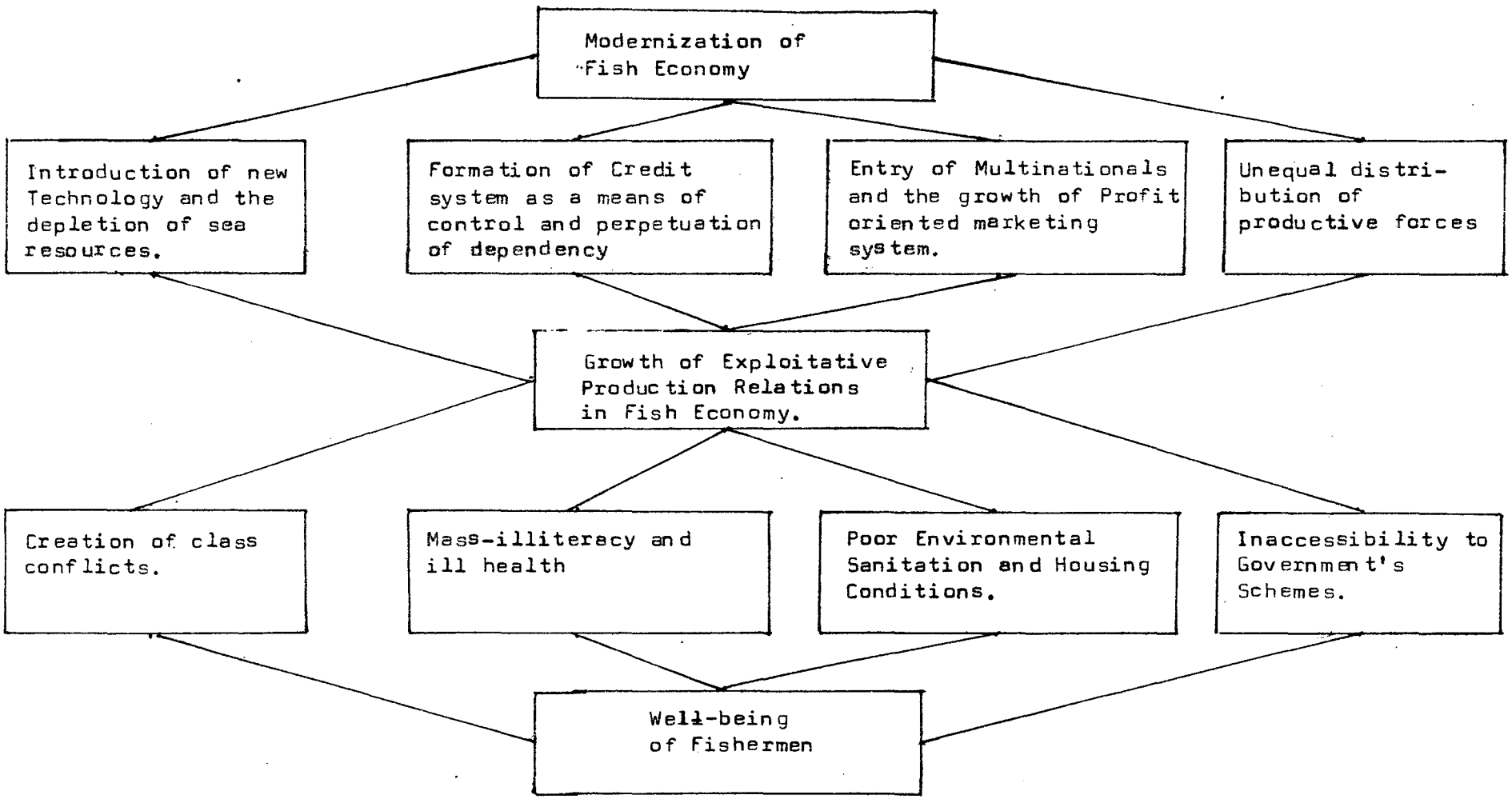

FIG.7

the houses provided by the government are in deplorable conditions. At the same time, the study reveals that the living conditions of the fishermerchants and the middlemen are not comparable to the deplorable conditions of the fishermen. There is an ever increasing class conflicts in this village. Only the few families in the village have the power to control the entire village administration.

The technology introduced into the fish economy, as a result of the already existing inequality of wealth, is accessible only to a few. In this process, the modernization has brought in the creation of merchant capitalist and the growth of profit oriented marketing system with the entry of multinationals. This is a vicious circle. As they are gradually pulled into the aura of technological sophitication they get further marginalised by the exploitative credit and marketing system. This can be compared to the introduction of green revolution in the agrarian set up. In their efforts to modernise the process of fishing, they are drawn into the vicious circle. The ownership pattern expatiated in the previous chapter amplify this. Out of households 227, only 22 households own mechanized boats and they have also largely depended on the credit system. The rest go on with their traditional fishing for hand to mouth existence.

The modernization of fish economy has become the development for the few and the misery for the majority. It has not only limited fishermen's capacity to meet their needs but also has limited their capacity to organise themselves as a group/community to fight against the social injustice committed to them. The emergence of an Association involving a few youth from the village has not been able to play much role to break the system of a few families controlling the entire mode of fish production in this village although they could take up a few measures to obtain some basic ameneties from the government.

From this study, we can infer that the relations of production in the fisheries sector of this village is in a way the reflection of the overall developmental strategy adopted in the larger society.

CHAPTER-VII

SUMMARY AND CONCLUSIONS

CHAPTER-VII

SUMMARY AND CONCLUSIONS

The major objective of this study was to analyse the modernization of fish economy and its impact on the well-being of fishermen. In order to understand the modernization of fish economy, four main variables of production relations viz. the ownership pattern, the credit system, the marketing system and the technology of fishing and the fishermen's knowledge of the resource base were studied. The interlinkages between these four main components form the production relations in fish economy. The following variables viz. the population characteristics, the housing conditions, the educational status, the health conditions, the availability of water supply and environmental sanitation, food consumption pattern, the availability and the accessibility of government schemes and the role of voluntary organisations and the peoples efforts to meet their basic needs were used as the indicators of well-being of fishermen. The impact of modernisation of fish economy on the well-being of fishermen was derived from this study.

Kumari Muttom, which is a small village near Kanyakumari was selected for this study. The major study was conducted in this village. In order to analyse the role of fishermen's organisations, another village where such an organisation is

functioning was selected. In this village, only a limited study was conducted.

A variety of tools such as interview schedule, observations, case studies, informal interviews, discussions and bibliographical studies were employed to generate qualitative and quantitative data. These tools were administered on 142 households out of which 129 were artisanal fishermen, 15 were modern fishermen, 5 were fisher merchants-cum-money lenders and 3 were money lenders-cummiddlemen. This was based on a census sampling as all the households of artisanal fishermen, merchants and middlemen were chosen. However, among the modern fishermen only 15 were selected on the basis that they have been owning the boats atleast for 5 years. The summary of the observations and findings and conclusions are given in the following sections.

(1) The predominant type of ownership fishing crafts and gears existing in this village is the 'quasi-ownership', as most of them have borrowed money from the merchants and middlemen for buying crafts and gears which are hypothecated to the latter and thus can be taken away at any time. There is a disparity in the ownership of artisenal and modern fishing equipments. Among the artisanal fishermen, most of them own one Catteram each eand only a few own two or three Cattarams each. The fishermen owning modern fishing crafts and gears are only 22 households out of 227 households.

(2) The most type of credit system existing in this village is 'market-tying' credit system. The 'labour tying' credit system is almost non-existant. In this village, the other fish buyers viz. the cycle loaders and the head loaders are also tied to the credit system because of the system called 'support' which is explained in chapter IV. The credit system to a great extent determines the production.

(3) The credit system has created a sense of dependency of the fishermen on the merchants and the middlemen who land money. The fishermen are unable to relieve themselves from the bondage of indebtedness. The main source of credit for the modern fisherman is the nationalised banks. So far no modern fisherman is able to clear aall the loans he has taken from the bank. This is mainly because of the depletion of sea resources and the heavy maintenance cost incurred.

(4) The marketing is a closed system which is linked to the credit system. This is used as a mechanism to control the entire market. The fisherman have received credit from the local merchants and money lenders, who in turn have received credit from the big merchants who export fish to multinationals. These big merchants class have received credit from the mulatinationls. There are three types of merketing, which takes place in this village : (1) the fish especially the shrimps is directly sold to the local merchants who sell them to the big merchants. Here the fish is sold by weight. (2) The cycle

loaders and the head loaders buy the fish through auction and sell them in the nearby markets/villages. (3) The sale of dry fish. In this case, either the fishermen dry the fish (mostly anchovies) and sell them to the local merchants or the local merchants buy the fish, dry it and sell them in the big market centres.

(5) There is a collusion between the merchants and the middlemen when the fish is being auctioned to keep the price down. Even the price for which the fish is sold, is not given to the fishermen as the merchants while buying the fish, especially the shrimps reduces some amount from the actual price.

There are double standards in prices. The price given to fishermen who are free from credit is higher than the price given to fishermen who are given credit. There is also an agreement between the merchants as they have fixed an uniform rate for shrimps eventhough they get a higher price when they resell them to the big merchants.

(6) The introduction of new technology has resulted in the depletion of resources. The mechanisation process has helped only a few fishermen who are already well-off.

Some of the technologies used by the artisanal fishermen are still superior in nature. Their skills in fishing and their knowledge about the resource base would help them to catch more fish. But unfortunately they are not able to catch more fish because of depletion of the resources due to over fishing by the mechanised boats.

(B) (1) The nature of occupation in which they are engaged demand more labour. Hence the preference for male children also exists among the fishing communities like the Agrarian communities. Among the children below the age of five, there are more number of deaths in the female children than the male children, which also shows the preference towards the male children.

(2) The houses in which fishermen live are mostly given by the government. But they are not conducive for human habitation as most of them are in a dilapidated condition. But some of the modern fishermen and all the merchants and middlemen live in spacious houses which have ectricity, water supply and other facilities.

(3) The environment in which the fishermen live is conducive to many diseases. Drinking water is supplies first to the lodges and guest houses in Kanyakumari Town and the village

gets only the remaining water. In Summer, people have to to distant places in search of water.

(4) Most of the children leave their education in the primary school itself. The dropout rate is higher for the male children than for the female children. This is because of the great demand for labour in their occupation.

(5) Diseases like diarrhoea, scabies, whooping cough and measles are commonly prevalent in the study area. The fishermen are rational in choosing the different systems of medicine available to them. For instance, they perceive Indian medicine as the moft effective medicine for diseases like jaundice and chickenpox. For other diseases a large number of them prefer allopathy medicine. This depends on the availability, perceived effectiveness and availability to the type of medicine. For instance, for sprains and fractures they approach the bonesetters who are readily available in the village.

(6) There are two voluntary agencies looking after the health needs of this village in the absence of any active role by primary health centre in meeting the health care needs of fishermen. These two voluntary organisations are functioning with religious underpinnings. The immunization of children in these villages is looked after by the voluntary agencies.

(7) It is paradoxcial that the fishermen cannot consume the product that they have produced. Mostly they eat rice and tapioca. They are unable to eat enough fish mainly because the depletion of resources has resulted in catching less fish and they are forced to sell this since many of them are indebted to the merchants and middlemen.

(8) Most of the government schemes for the welfare of fisherman are not available to them. In this village only the housing scheme and the Drought Relief Fund scheme are implemented. Even here political and caste factors plays a role in getting the benefits of these schemes.

(9) The fishermen from this village are not able to relieve themselves from the clutches of middlemen and merchants inspite of the role played by the voluntary agencies. At the same time, the fishermen from the other village where the fishermen's sangam is operating, are able to free themselves from this exploitation.

CONCLUSIONS

Fishermen are not able to improve their economic and social status because of two main reasons viz - (i) depletion of resources and (ii) the low price they get for their product.

This is the outcome of the introduction of new technologies. More and more new technologies are introduced in the fisheries sector because of the increasing demand for fish especially the shrimps, by the multinationals who act through the merchant class in India. As a result of profit-oriented marketing system and an exploitative credit system, the labour of the fishermen is extracted by the local merchants and middlemen who act as the agents of merchant capitalists for the multinationals.

The new technologies introduced in the name of aid and development has created an abject dependency of the fishermen on the local merchants and middlemen who in turn depend on the big merchant capitalists. These merchant capitalists depend on the multinationals for more credit in order to set up fish processing plants and factories. The multinationals perpetuate this dependency by introducing more new technologies and giving more loans and exercise a full control over the entire fish production in India. At the local/village level big merchants with the help of local merchants control the entire production. The actual and the real producers do not have any power to enjoy what they produce and they are made subservient to the interest of the merchants. As a result, the fishermen are denied of their basic needs and their overall well-being in

relation to their education, their housing condition, the environment in which they live, the availability of water supply, the health conditions and food consumption pattern, the availability of government schemes. They are also unable to organise themselves to fight against the forces that are limiting their well-being.

Finally, the nature of production relations which is the nucleus of modernization of fish economy pave the way for the export of fish products which we call as 'protein pilferage' by the multinationals, which not only deny the fishermen of their well-being but also deprive the community of this valuable protein food.

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APPENDIX - I

INTERVIEW SCHEDULE

ARTISANAL FISHERMEN

Part - I

Dated : _____

House No : _____

1. Name _____

2. Age _____

3. Education _____

4. Family Composition

Sl.No.	Name	Sex		Age	Education	Occupation	Relation-ship to the Resp.	Total
		M	F					

5. Fishing crafts

Sl.No.	Number of Catamarans	Year of buying	Cost (Rs.)	Nature of ownership

6. Fishing Gears.

Sl.No.	Name of the Gear	No.	Year of Buying	Cost (Rs.)	Nature of ownership
1.	Anchovies Net				
2.	Lobster Net				
3.	Sardine Net				
4.	Prawn Net				
5.	'Thattumadi'				
6.	Hook and Line				

7. Have you received any credit from any money lenders? If yes give the particulars.

Sl.No.	Sources	Amount (Rs.)	Purpose	Year of buying	Conditions
1.	Merchants-cum-money lenders				
2.	Money lenders-cum-middlemen				
3.	Nationalised Banks				
4.	Other money lenders (specify)				

8. Do you know anything about the governments welfare schemes for fishermen? If yes give the particulars.

Name of the schemes	Knows about the scheme		Benefits received	Other particular
	Yes	No		
Distribution of mechanised fishing boats.				
Inland fisheries development scheme.				
Estuarine fishermen's development.				
Ice-plant-cum-cold storage.				
Provision of vehicles for quick transport facilities.				
Formulation of fishermen cooperative societies.				
Housing schemes.				
Acquisition of land to rehabilitate fishermen.				
Relief to the fishermen.				
Protection from sea erosion and				
Guidelights and approach roads.				
Drought Relief Fund.				

9. Do you belong to any association/organization and committees in your village. If you give the name of the association, your designation and the conditions.

10. In your opinion who holds high position in the village?

i) The parish priest
ii) Village committee leader.
iii) The merchant-cum-money lender.
iv) President of Tamilnadu fishermen co-operative society.
v) Any other (specify).

11. If you have repaid your credit, how could you able to do so?

12. Are you able to go for fishing at all seasons? If not give reasons?

13. What do you do at the lean season for maintaining your family?

14. How many crew members you have for fishing and what is their relationship to you?

15. To whom do you sell the fish usually?

16. Are you able to sell the fish without any limitations?

17. In your opinion, what are the factors determine the price for fish?

18. What do you do when you do not get fair price for the fish you catch?

19. Do you think that there is depletion of resources in the sea? If yes give reasons?

20. What action does the merchant-cum-money lender take, if you refuse/fail to sell the shrimps to him?

21. What measures can be taken to retrieve fishermen from the clutches of merchants and middlemen according to you?

22. Do you think that there is agreement between the merchants and the auctioneers/middlemen at the time of selling fish? If yes, explain.

23. Among the credit giving sources which one is your proper and give reasons for your preference?

24. Do you know anything about the Fisheries Regulation Act?

25. Did you face any problem with the [illegible] at any time while fishing? If yes, explain.

Part - II

1. Do you take enough fish for consumption always ? If not give reasons.

2. What are the reasons in which your family is able to get enough food? Explain.

3. What measures do you take when you are unable to get enough food for your family?

4. Give the following particulars of your house.

a) Type — Pucka / Semi-pucka / Kutcha

b) Number of rooms

c) Electricity connections — Yes / No.

d) Materials used for — Roof / Floor / Wall

e) Furnitures
   - Tables
   - Chairs
   - Benches
   - Cot
   - Almirah
   - Any other.

f) Water closets and bathing room — Yes / No

g) Water taps attached — Yes / No

5. What is your opinion about the [illegible] by the government?

6. Mention the conditions and difficulties [illegible] in the government house.

7. What are facilities you need in your house?

8. Do you want to attach a drinking water pipe in your house? If yes, what in the procedure to be followed and the conditions to be fulfilled?

9. How many times in a week you get water supply?

10. What reasons do you give for not getting regular water supply in your village?

11. How long do the authorities take to repair a waterpipe?

12. Are you willing to use the public convenience? If no give reasons.

13. Do you think that you need a bath room in your house? Yes or No give reasons.

14. Where do you throw the waste?

15. Do the concerned department persons (scavengers) come to remove the work from the tub? If yes, how often.

16. Give the following details of your children's education.

Sl.No.	Name	Sex	Age	Class	Name of the school/ college	Difficulties faced for getting admission.

17. Do you like your children to go for higher education? If yes till what level?

_____

_____

_____

_____

_____

_____

18. Give the particulars of the disease affected your family members and the place of treatment.

S.No.	Name of the disease	Person affected		Treated		Place of Treatment	Number of times of attack
		Age	Sex	Yes	No		
1.	Scabies						
2.	Measles						
3.	Chicken pox						
4.	T.B.						
5.	Diarrhoea						
6.	Polio						
7.	Jaundice						
8.	Ulcer						
9.	Malaria						
10.	Other specify						

19. Details of persons died in the family.

Sl.No.	Age Group (yrs.)	Sex		Year	causes	Treated		Duration of illness
		M	F			Yes	No	
1.	Below 5 yes							
2.	5 - 14							
3.	15 - 19							
4.	20 - 35							
5.	36 - 60							
6.	60 & above							

20. Given below is a list of six diseases. Of these, give number (1) to the disease which can occur most of the times and number (6) to the disease which occur the least in your family. Likewise, give the numbers 2,3,4,5 and classify them according to the chances of occuring.

Diarrhoea - Dysentery ----------
Scabies ----------
Chicken pox ----------
Measles ----------
Polio ----------
Whooping Cough ----------

21. What is P.H.C.? When did you visit last?

22. What is your opinion about the functioning of P.H.C. ?

23. For what kind of diseases you would approach the local healers and the hospitals.

24. What immediate measures do you take when a person fall seriously ill in your family?

25. Details of family planning/sterilization.

Methods	Person		Year	Place			Recommended by	Difficulties faced.
	M	F		Pvt. Hosp.	Govt. Hosp.	P.H.C.		

26. When a person is affected by any one of the following diseases what are the changes that take place in that person?

1. Malaria -
2. Cholera -
3. T.B. -
4. Jaundice-

27. Who attended the deliveries that took place in your house?

28. To attend deliveries at home, whom do the people prefer most and why?

29. Ways of feeding children

Breast Milk - No. of months -

Starting after -- - months

Other foods -

Type of food ------

30. What measures do you take when the children are affected by diarrhoea and fever with cough?

APPENDIX II

INTERVIEW SCHEDULE

MODERN FISHERMEN

Part I

Dated : _____

House No: _____

1. Name _____

2. Age _____

3. Education _____

4. Family composition _____

Sl.No.	Name	Sex		Education	Occupation	Relation-ship to Resp.	Total
		M	F				

5. Assets.

Sl.No.	Types	Value (Rs.)	Year of ownership	Any other information
1.	Land			
2.	Jewels			
3.	House			
4.	Vehicles			
5.	Radio + Video etc.			
6.	Cattles			
7.	Any other (Specify)			

6. Details on Mechanised Boats (Craft).

Sl.No.	Size of the Boats	Nature of ownership	Year of Buying	Cost (Rs.)	Source	Conditions for getting credit

7. Details on Gears.

Sl.No.	Name of the Net	Nature of ownership	Year of buying	Cost (Rs.)	Source	Conditions for getting credit

8. Did your boat/nets succumb to any major demages at any time? If yes explain.

9. On an average how much money you spend on the following item. per trip?

a) Fuel — Diesel, Kerosene, Petrol

b) Lubricants

c) Miscellaneous.

10. Are you able to go for fishing at all the seasons? If yes give the following particulars.

a) Seasons and the Places of fishing

b) Mode of sel ing fish at other places

11. Give the particulars on the crew members

Sl.No.	Name	Relationship to the Resp.	Mode of sharing the income			
			Daily Wege	Weekly Wege	Monthly Wege	Percentage Wage

12. (Refer Q. No. 7 - 25 of a[illegible] - .

P[illegible] - II

(A[illegible] endix -

APPENDIX - III

FISHMERCHANTS

Part - I

Dated :

House No.:

1. Name

2. Age

3. Education

4. Family Composition

Sl.No. Name	Sex		Age	Education Occupation	Relation-ship to the Resp.	Total
	M	F				

5. Nature of buying fish.

Sl.No.	Type of fish	Mode of buying	No. of Persons Directly selling shrimps to you	Reasons

6. Nature of Marketing fish.

Sl. No.	Types of fish	Year of starting	To whom/where do you market fish		Capital (Rs.)	
			Name of the Exporting company	Name of the marketing places	Initi-ally	Now

7. Would you mind telling the exact market price for shrimps and cuttlefish? If yes give the particulars.

a) Cost of Prawns per kg.

Buying rate (Rs.)

Selling rate (Rs.)

b) Cost of lobsters per kg.

Buying rate (Rs.)

Selling rate (Rs.)

c) Cost of cuttle fish per kg.

Buying rate (Rs.)

Selling rate(Rs.)

8. Are you able to give the amount to fishermen immediately after buying the fish from the fishermen? If no give reasons.

9. Are you able to get the payment immediately from the exporting companies which buy fish from you? If no give reasons.

10. Would you mind telling the amount of credit you have given to fishermen? If yes give the particulars.

a) Total No. of persons -
b) Total amount of credit (Rs.) -
c) Conditions against which the credit is given -

11. What was your occupation before starting this business and what are reasons for starting this business?

12. Do you think that there is depletion of resources in the sea? If yes give reasons.

13. In your opinion what are the contributing factors determining the price of fish?

14. Have you ever met any big loss in your business? If yes explain.

Part - II

(As in Appendix - I)