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TECHNICAL ASSISTANCE PROJECTS AND SOCIO-ECONOMIC CHANGE:

THE NORWEGIAN INTERVENTION IN KERALA'S FISHERIES DEVELOPMENT EXPERIENCE

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INTRODUCTION

This paper is about a technical assistance project and an analysis of its impact on the socio-economic fabric of Kerala State's fish economy. The analysis hopes to provide a better basis for understanding the origins and nature of the crisis and conflicts that presently beset the fish economy attempting also to give preliminary insights for resolving them.

The Indo-Norwegian Project (hereinafter referred to as INP) was the world's first technical assistance project of its type undertaken between a developed and a developing economy. In the year of its conception -- 1952 -- very little was known about the possible impact and potentials of such assistance in the overall context of contributing to the economic growth of the newly independent 'underdeveloped' economies. Transfering of technology and capital were however seen as the most important panacea for the economic ills of such societies.

The thrust of our analysis can metaphorically be expressed as an attempt to provide a diachronic view of the movement of a large bubble on a stream -- the INP being the bubble and the marine fish economy of Kerala State the stream. Our total time frame is over a century but we deal elaborately only with the post-1950 periods.

Our analysis of the fish economy starts from a review of 'initial conditions' with respect to the resource base; the existing technology and skills; the organisation of the producers -- particularly the control of merchant capitalists over them; and the nature of the markets for fish. Our concern is to show how the direction and the dynamics of the development of Kerala's fish economy were shaped by the socio-economic forces within and outside it. The assessment of the impact of the INP is woven into the fabric of this larger concern. We see the INP as an intervention consciously but hastily made; a large bubble which was formed and which had a pace of drift of its own. However we will finally show how the INP bubble 'glittered' only when it was caught in the overpowering current of the economic interests controlling the economy who in their pursuit of profit drastically changed the direction of the stream.

The paper is organised into three sections.

The first deals with the past and the more recent history until the pre-independence era and the initiation of the Indo-Norwegian Project in 1952. This part attempts to protray the overall context and concerns of fisheries development initiatives of the region of Kerala and India. It also provides the background to the dynamics that went behind the establishment of the Indo-Norwegian Project.

The second part deals with over three decades of planned fisheries development in Kerala -- 1950 to 1982 -- showing the changing approaches to development and the consequences emanating therefrom. This is the more substantative part of the paper. It evaluates state policy, the efforts of the Norwegians, the role of the private sector and the larger socio-economic forces in transforming the fish economy and the effects of this on fishworkers and fish.

The final part deals with the present crisis in Kerala's fish economy and highlights the questions being raised about it -- including the very pointed one about the extent of Norwegian responsibility for the present state of affairs.

SECTION ONE

INITIAL CONDITIONS, SHAPING OF PERSPECTIVES

There is a hoary tradition to the marine fishing industry in Kerala. Though we have no authentic records of the history of periods before the Christian era, there is scattered evidence in the songs of the Sangam Age[1] (1st - 4th century AD) and writings of travellers like Pliny who wrote in first century AD about the immensity of the fishery and the importance of the fishing community.

Resource Plenitude

That the waters off the coast of Kerala were plentiful in fish resources have been recorded in later centuries.[2] It is said that the Arab traders found their way to Malabar by following the teeming shoals of oil sardines which migrate down the West Coast of India hugging close to the in-shore waters.[3] More recent periods of European colonial rule in the region saw the systematic documentation of the flora and fauna for the scientific value of ichthyology. Francis Day's "Fishes of Malabar" published in 1865 was one of the kind.[4] The waters off the Travancore region alone, in the 1940's, was calculated to be yielding 254 Kg of fish per hectare[5] and "this is double the quantity produced by an acre of water considered to be rich by the fishery experts of the world".[6] This was inspite of the fact that only 15 percent of the harvestable area was fished.[7] The potential in the remaining area was assessed to field half a million otons more of fish.[8]

Diversity in Technology and Skills

The conversion of the living marine resource into products with use and exchange value are mediated by the skills of the fishermen and the judicious use of technology. Early references to the methods of fishing and the arts and science related to it are also available.[9] Two striking features of fishing technology are its diversity and the strong element of the exotic. The diversity is largely influenced by the variety and nature of the distribution of fish species and by factors of physical oceanography. The exotic influence is largely due to the adoption of several technological designs from other countries with which the region of Kerala had extensive contact primarily through maritime trade links. The hallmarks of the techniques thus adopted were their appropriateness to the aquatic ecosystem and their inherent limits on productivity.[10] It was a technology appropriate for fishing merely as a source of negre livelihood.

The greatest asset of the fishermen of Kerala is their accumulated knowledge about fish, fish habits, waves, currents and stars which they have, though a tradition of learning by doing, handed down from generation to generation.[11] The whole system of fishing operations -- be it shark fishing in Poonthura, thangavala operations in Purakad or the beppu fishing in Kozhikode -- are not determined apriori by a process of inductive reasoning as would be in the case of a modern fishing expedition. Having over time assimilated the nuances of their eco-system by a continuous series of varied but concrete experiences, the progress of their fishing operation is a simultaneous integration of a large number of discrete thought processes which defy verbalisation in the form of any general theory on the practice of fishing.

Early Integration into Market Economy

It is therefore evident that the natural resources, skilled labour power and technique necessary for the development of a viable fish economy have always been present in the Kerala region. Inspite of this it would seem that the fishermen were hardly the main beneficiaries of development. The control of the fish economy by persons who dominated the realm of trade was constantly a factor to reckon with. This arises partly from the perishability of fish and the fact that it formed only a small portion of the fishermen's consumption; there were large surpluses available for disposal and trade even at very low levels of productivity. Interactions with the market therefore came at a rather early phase in the development of productive forces. The initial trade/barter activities were perhaps taken up by the wives of fishermen and subsequently, in a caste-based society, by men from other communities who did not consider fish trade a taboo.

Merchants and Responses to the Market

We have evidence to show that the fish economy of the region of Kerala responded effectively to the pulls of the market and adapted its harvesting and processing activities to cater to these demands. This was because of a merchant class who were quick to respond to profit opportunity. However, as we shall note below, the response was often at the expense of the fishermen and the larger social good.

From Travancore and Cochin following the setting up of coffee plantations in the Western ghat regions the demand for dried fish among the coolies employed provided a good market. The carriages which brought down coffee from the highlands reconveyed a large amount of dried fish.[12/] More important was the opening up of the country by the railways laid by the

British in Malabar and Cochin.[13] The dry fish exports from Travancore where good salt was available doubled from 26982 cwt (1373 tonnes) in 1854 to 54166 cwts (2757 tonnes) in 1864.[14] This "export" relates primarily to movement within the Indian sub-continent.

The most interesting example of the overriding response to market demand which is of particular interest in the context of this study is the case of fish oil exports from Malabar.

Oil sardines which even until 1827 were caught primarily for "manuring the rice-fields and cocoa-nut trees (because they were) too fat to salt well",[15] in a span of 30-35 years became the raw material for the thriving fish oil exports from Malabar and Cochin to Great Britain. With the fast depletion of the whale population due to over-fishing, the world supply of fish oil was greatly reduced. Fish oil prices increased and this spurred the search for alternate resources and sources of supply. In the 1930's fish oil export from Malabar was unheardd of. In 1845-46 about 66 cwt (34 tonnes) reached London. By 1863-64 the quantity had reached 82,799 cwt (4214 tonnes) valued at over £7000 per annum compared to around £1270 in 1850-51.[16]

Such a quick response to international demand could only be undertaken with the initiative and drive of a merchant class open and respective to profit opportunities. The evidence seem to indicate that relatively very little investment and labour was required to extract oil compared with (say) the alternative of salting or drying for local consumption.[17]

Merchant Control Over Fishermen

The question remains: how were unorganised producers made to respond to the dictates of the market through the aegis of merchant capital? The answer lies in the fact that the overriding control of merchants and middleman

was the nexus between credit and marketing of the produce. As reported by the Banking Enquiry Committee of Travancore in 1930 ".....once the producer is indebted to the middlemen the tendency is that he is unable independently to market his commodity and the natural results are that he gets less price and has to pay interest on loans. This cuts his small margin of profit clean. One of the witnesses at Quilon informed us that two agents at Quilon mostly control the export trade. They advance all the money required on condition that the catch is sold to them. For every Rs.160 advanced to them they get a primissory note executed for Rs.200. It was said that they never take back the capital, but only the interest which is Rs.40 per annum. The fishermen practically loses his liberty to sell his fish to anyone else".[18/] Another source tells us that in 1931 the export of dried fish from Travancore was estimated to yield Rs.40 lakhs, "but the export trade is in the hands of a few rich wholesale merchants who take the lion's share and the poor workers get precious little".[19/]

Producers' Organisations -- Their Failure

Attempts at creating forms of organisations which would give the fishermen greater control over their produce were made in the Travancore region as early as 1917. These organisations were to be registered as co-operatives of fish producers and they were to perform the function of providing credit to redeem fishermen from indebtedness; take control of processing facilities like curing yards; sell their fish collectively and have collectively owned fishing equipment. By 1933 there were 95 cooperatives with a membership of 6194 covering about a third of the active fishermen.[20/] A report[21/] evaluating these cooperatives lament their poor performance and point to the lack of support extended by community leaders and

the government to the fishermen in their struggle against the merchants and middlemen who have consistently sabotaged the cooperatives.

Profits and Ecological Crisis

The social and ecological impact of the exploitation of a natural resource solely by the dictates of profit was also a matter that received attention in the last century. Day wondered whether the trend of oil exports will result in "species well adopted for salting ..... finding their way into the fish oil boiling pot ....." and further states "..... it must be left for future years to demonstrate whether the present increase of this fish-oil is a healthy or an unhealthy stimulus due to present high prices; for if the latter, the fisheries are being overfished and the future loss will be great....."[22/]

We shall see how these initial conditions and the issues mentioned recur in Kerala's fish economy and become matters of live concern to this day. The Norwegians intervened with the intention of initiating change. In hindsight one may conclude that they were largely unaware of these initial conditions and so were deprived of a proper sense of historical and social perspective. This in turn greatly coloured the character of their intervention.

Fishery Development Priorities in the State of Travancore-Cochin

There is a mistaken notion that the Norwegiansentered into a fisheries sector which was stagnating and which received little priority in the development perspectives of the State. In fact the fisheries sector of the early 1950's in Travancore, which was recovering from the post-war phase, was as vibrant as the Norwegian fishery during the first quinquinium of Norwegian independence from Sweden in 1905. While the sector by no means

gave the visual impression of being 'modern' it certainly was innovative and dynamic. The basic premise of fisheries development plans in the Travancore region hinged on the judicious exploitation of marine resources by effectively and gradually raising the productive capabilities of the existing facilities giving primacy to the accumulated skills of the fishermen. The thrust was to ensure that technological and scientific research for this purpose be conducted on a "basis of sound commercial principles ... without overlooking the interests of those engaged in the industry and their urgent problems".[23/]

The ongoing programmes to facilitate this were many. They included: the supply of wood to fishermen to build their kattumarams and canoes and cotton yarn to make their nets; establishment of fishing curing yards under the supervision of fishery officers to ensure a regular supply of good salt and hygenic processing;[24/] a programme for phased mechanisation for existing craft amenable to this; tapping new resources beyond the reach of the traditional crafts by using a large trawler to tow indigenous fishing crafts to and from the offshore fish grounds; the formation of a fishing company called 'West Coast Fisheries Ltd.' with government participation to undertake exports and other business; a reorganisation of the cooperatives with fishery officers taking interest in the day to day activities, and the cooperatives themselves being organised to provide the supplies of foodgrains, cloth and other necessities to the fishermen.

Introduction of the latest technology of freezing was attempted as early as 1938 by the installation of a refrigeration plant for preservation and cold storage of fish. Following this it was reported that fish was "made available in the High Ranges and Tamil Country. 95,000 lbs of frozen fish were transported to different parts of South India (last year) though

it has to be remembered that the market is shy owing to the comparitively high price of cold-stored fish".[25] There was awareness of the vast marine resources yet to be tapped and also the potentials of the prawn fishery. The author of the Travancore Manual states: "In addition to these different varieties of fish, the invertebrate prawns are found in plenty in our backwaters and the sea and as they occupy a very prominent place among the commercial products from our waters we must not omit to mention them when speaking of the fisheries of Travancore".[26]

In spite of the large number of indigenous initiatives to develop the fishery resources there was a strong opinion in the concerned fishery circles of Travancore that adopting some of the technology of fishing from the developed fishery countries like Britain and Scandinavia would augur well for Travancore. Alluding to the rags to riches fairy tale, the fisheries sector was stated to have the potential of becoming the Cinderella of industries in Travancore.

Priorities of the Union of India

The philosophy of fisheries development for the Union of India as a whole was markedly different. Though fisheries was always considered a state subject it was deemed necessary to formulate a national policy on it. An exercise of sorts was conducted in 1946 by the National Planning Committee wherein we see what has emerged as the most dominant school of thought among fishery policy makers in India today. The basic premise of this school is the characterisation of the existing fishery sector as an occupation "largely of a primitive character, carried on by ignorant, unorganised and ill-equipped fishermen. Their techniques are rudimentary, their tackle, elementary, their capital equipment slight and inefficient".[27] This total

rejection is followed by a call for the need to adopt modern techniques, the creation of a fisheries bureaucracy and a string of scientific and research institutions to form the basis for modernisation of the sector. Interestingly the representative of the Government of Travancore on the Committee[28] has recorded his dissent note pointing out that the fundamental requirement was to build up the industry from what exists before overburdening it with a plethora of research institutes and administrative machinery at an early stage. That research priorities should evolve from the demands of the existing industry and not be divorced from it was the major thrust of his argument. In hindsight we realise that his views were not taken seriously.

SECTION TWO

THE DEVELOPMENT DECADES

In this section, which forms the main substance of the paper, we will attempt to chart out in detail a course covering over three decades -- 1950 to 1984. We shall try to bring out the various key factors that conditioned the growth and direction of the fish economy of Kerala and weave into this the role played by the INP. We shall follow the pattern of dealing with each decade in a separate part discussing the significant events and changes that occurred therein. Each part will end with a balance sheet taking stock of the "assets and liabilities" of the period.

PART I

THE FIFTIES: INITIATING PLANNED CHANGE

With the euphoria of gaining independence still very much in the air, the enthusiasm for introducing planned socio-economic change in the country was at a very high ebb. With Jawaharlal Nehru at the helm the conviction and commitment to transform every sector of the economy with the desirable participation of the people was evident among politicians and planners. The institution of the Five Year Plans and the commencement of the Community Development Programme were two indicators of these noble intentions.

For the region that is now called Kerala, the decade of the fifties must be noted for four important events which had a very significant bearing on the fisheries sector. They are: (a) The initiation of the Indo-Norwegian Project idea in 1952 (b) the entry of frozen penaeid prawns as an important item of export. (c) The creation of Kerala State in late 1956 by an amalgamation of the greater parts of the erstwhile State of Travancore-Cochin and

the Malabar District of Madras State and (d) the coming to power in 1957 of the world's first democratically elected communist government in the State.

The importance of the first two events, we will consider shortly. The two political events occuring in the latter half of the decade and their fishery significance warrants explanation first.

Creation of Kerala State and the Communist Ministry

The creation of Kerala State in 1956 brought together into one politic. unit three crucial factors needed for a wholesome development of fisheries for the larger social good; the most productive waters in the Indian sub-continent the best of skilled fishermen with a wide diversity of techniques and the two most enlightened fishery administrations in the country ... that of the State of Travancore-Cochin and the Malabar district of Madras State.

With the coming to power of a communist government in August 1957 they highlighted the need to organise the fish producers, raise their productivity and develop fisheries giving primacy to fish as a source of livelihood and food. In doing so they were only reinforcing the orientation of the erstwhile Government of Travancore-Cochin. The Norwegian intervention in the form of the Indo-Norwegian Project for Fisheries Community Development was initiated before the above mentioned political events. But when these events did materialise they had a considerable bearing on the INP. However, as we shall see later, it was the snow-balling impact of the first export of frozen prawns to the USA by a private firm and some of the "discoveries" during the INP's activities in the fifties which created what we shall show to be a turning point in the thrust and direction of the fisheries development perspectives of Kerala State.

The Indo-Norwegian Project

The Norwegian intervention into Kerala's fish economy has been a target of much discussion and analysis.[29] We will draw from these sources but will attempt to situate the intervention in a perspective which we consider to have been inadequately dealt with by others. The thrust of earlier analyses has often been to seek answers for the "impact" of the intervention at the micro-level within the dynamics of the project area situated in the erstwhile State of Travancore-Cochin. The wavering fortunes of the Norwegian intervention are sought to be explained on the basis of the styles and whims of personalities -- Norwegian and Indian -- associated with the project from time to time. What we shall try is to greatly enlarge this realm and consider the effect that the social and economic forces in the world at large and the region of Kerala had on shaping and determining the "impact" of the Norwegian intervention.

The Norwegian intervention into Kerala came in the form of an Indo-Norwegian Project (INP) for Fisheries Community Development in the States of Travancore-Cochin and took effect in January 1953 following a tripartite agreement signed in New Delhi between the United Nations, the Government of Norway and the Government of India.[30]

The INP was the world's first development project of its kind inspired as a part of the UN Expanded Programme for Technical Assistance which was seen as an avenue for postwar reconstruction and development assistance to the newly independent developing countries. The success of the Marshall Plan in the reconstruction of the war-torn economies of the west was a point of departure for developed economies to extend technical assistance in the form of machinery, aid and expertise to what in those times were referred to as "underdeveloped economies". In Norway under the

leadership of the Labour party in power there was a consensus and popular pressure to undertake such technical assistance programmes as an extension of the social democratic solidarity ideal. With this objective the Norwegian Storting (parliament) established the Norwegian Foundation for Assistance to Underdeveloped Countries in the summer of 1952. Apart from the solidarity ideal there were other less noble motives to the establishment of the Foundation.[31]

The Norwegians were undoubtedly purposefully motivated but were inadequately prepared to face the complexities of such a new form of outreach to assist in the development programmes of newly emerging nations. Among the Norwegian Directors of the Foundation there were very few people having knowledge of underdeveloped countries in general and an even smaller number had any knowledge of economic growth problems in them. Apart from India's appeal as a newly independent democratic country and the popular appeal of Gandhi and Nehru, very little else was comprehended by the Norwegians about the problems and needs of development in India; the social, cultural, economic structures through which development was to be achieved; or about the administrative machinery for undertaking the concrete tasks.

The Board Directors of the India Fund (as the Foundation was also called) had a few guidelines given to them before they set out on their mission to India (in late 1952) to identify a project in which they could get involved. The main pressure was to ensure by all means that a supplementary agreement going into the specifics of a technical assistance project be concluded. Priority was to be accorded to food production in a limited rural area.[32] Involvement in industrial development in India's large public sector was ruled out and investment through the private sector was ideological not suited. The delegation was instructed not to choose a

fisheries project.[33] Since the Indian Government had not requested for Norwegian assistance there was no *a priori* guarantee of a market for a project suiting Norwegian pre-conditions.

As anticipated there were difficulties in finding an appropriate project. Having moved from Himachal Pradesh to Assam and finally reaching Travancore they had to settled for a fisheries project in the latter area[34] or go back with no project at all. The Indian Government was not keen to accept a purely technical assistance programme and were keen to fit the Norwegian offer into the framework of the Community Development Programmes being propogated at that time.[35] The finally stated objectives in the supplementary agreement were:[36]

To bring about:

(a) an increase in the return of fishermen's activity

(b) an efficient distribution of fresh fish and improvement of fish products

(c) an improvement of the health and sanitary conditions of the fishing population and

(d) in general, a higher standard of living for the community in the project area.

These objectives were clearly the result of the process of compromise between Norwegian technical assistance priorities *per se*, the overall philosophy of the Government of India and the development concerns of the Government of Travancore-Cochin.[37]

The Norwegian intervention in India and its involvement in the fisheries sector of Travancore must be seen against this backdrop. The Government of India had nothing to loose by extending a warm welcome to the Norwegians. The Government of Travancore-Cochin on the other hand was open to Norwegian involvement, but only in the fishery sector. The Norwegian

delegation accepted the fishery project[38] under the terms that it would be "administered by the Government of Travancore, under the supervision of the Government of India and in consultation with the Representative of the Board of the Norwegian Foundation."[39]

The Indo-Norwegian Project can be treated in two main phases. The first phase is from 1953-1963 when the activities were primarily concentrated in Kerala in the erstwhile Travancore-Cochin region. Within Kerala during this phase the project primarily covered 3 fishing villages in the district of Quilon with a population of 12,000 in 1952.

The second phase from 1963 to 1972 consisted partly of a continuation of only some of the fishery activities initiated in Kerala and partly an extention of this to two other maritime states of Karnataka and Tamil Nadu.

In this part we will concentrate on the INP's first phase. We shall not go into elaborate details of the particular activities undertaken during this phase since it would be a repetition of ground covered by several authors and is now well known. We will also restrict our discussion to the first two fishery related objectives of the project.

The Indo-Norwegian Project: Launching Problems

As pointed out earlier, the first supplement to the main agreement signed before the start of the project clearly bore the mark of concerns uppermost in the minds of the Travancore fisheries administration. In a context where state finances were very limited, the merits of a pilot project of the type the INP was envisaged to become, were measured to be worth the "risks".[40]

Given the time in history and the pioneering nature of the effort it is but understandable that the INP was confronted with many teething troubles in the initial stages. However, even giving allowance for this we find that the initial years -- 1953 to 1957 - were marked by an inability to launch the programme of action for want of skills and understanding rather than want of facilities and finances.[41]

We must elaborate:

The strategy for increasing productivity of the fish harvesting activity spelt out in the agreement states:

> "to the extent feasible present fishing boats will be supplied with suitable motors" [Clause 1d (i)]

What we see is that in less than 6 months of the commencement of the INP the Norwegians had reached the conclusion that this was not feasible. It is strange that the local canoe had to be shipped all the way to Norway, fitted with engines, tested in Norwegian fjords and then pronounced to be unsuitable for motorisation in Travancore.[42] A ready made alternative -- a smaller flat-keeled boat designed in Norway -- was offered. However this alternative never proved superior to the existing traditional canoes and if some fishermen did accept it this was perhaps only because it was given to them to experiment with.[43]

Interestingly in 1954 the dugout canoes in the State of Saurashtra (in north-west India now in Gujarat State) which were similar to the ones available in Quilon, were being very successfully motorised with both in-board and outboard engines.[44]

On the question of processing technologies the first supplement states:

"Equipment will be introduced for the extraction of oil and the possibilities of improving curing methods and producing fish meal from waste products will be examined" /Clause 1 d(ii)/

Interestingly we note that the INP did not take up any of this. This neglect is particularly noteworthy considering that there were two fish curing yards established in two INP villages -- Neendakara and Puthenthura -- by the Travancore Fisheries Department. Here fishermen of the area continued to cure fish during this period. Moreover, this is all the more surprising since Norwegian knowledge on drying and curing fish and the attempts at making a protein concentrate from the entrails of fish was also fairly progressed.[45]

The deviation from the original terms of the agreement is also perceived in the setting up of a Fisheries Section branch office in Cochin in early 1955. Pressure was also exerted by the Norwegians on the Government of India to enter into a second supplementary agreement which would give sanction to the attempts to experiment with shrimp trawling, freezing technology and exports of prawns -- all of which were developing in quick strides in the private sector in Travancore-Cochin.

It is our understanding that the most important reason for the stalemate of these early years was the lack of adequate fishery competence on the part of the early Norwegian collaborators and hence their inability to adopt a greater "aquarian rationality" in their overwhelming concern for technical assistance per se. We also consider the "resistance" of the Indian counterparts -- (especially those from the fishery administration of the erstwhile state of Travancore) as well as their constant insistence on sticking to the letter of the agreement[46] as a response to Norwegian technical assistance being pushed without cognisance of the economic, social and political milieu in the fishery sector of the state as a whole.

The Fish Economy of Kerala

The fishery realm outside the Indo-Norwegian Project was largely unaffected by the activities that went on within the project area.

With the initiation of the Five Year Plans the fisheries sector also moved into the arena of planned development. The investment made by the State of Travancore-Cochin in fisheries through the hastily prepared First Five Year Plan (1951-55) was a paltry sum of Rs.0.27 million implying that the bulk of the investment made during that period was wholly by the private sector -- largely the fishermen themselves aided by the private sources of funds from merchants and money lenders.

During this First Plan period the average fish production for the region that formed Kerala State was estimated to be around 1,81,000 tonnes. The main economic species were oil sardines and mackerals. All this fish was caught by the artisanal fishermen using their non-mechanised wooden craft and traditional cotton nets or hooks.

The Second Five Year Plan (1955-60) was more thoughtfully planned and the possibility of using Plan expenditures to create an economic environment oriented to certain spelt out goals was attempted.

During this Second Plan the state invested a total of Rs.6 million for fisheries development of which Rs.2.16 million (36 percent) was spent on production oriented schemes and Rs.3.38 million (56 percent) on processing and marketing schemes. From the outlay for the production oriented schemes as much as Rs.1.86 million (86 percent) was spent on providing credit to fishermen through cooperatives and making improvements to the traditional craft and gear (particularly for supplying nylon nets and timber for craft).

Of the outlay for processing/marketing schemes, processing facilities for drying and curing and internal market oriented programmes received priority claiming 64 percent of the funds. The schemes initiated during the period were a continuation of the pre-1950 orientation and were essentially centred around strengthening what we have elsewhere referred to as the traditional sector[47] of the fish economy of the region.

During this plan phase, fisheries development was seen as essentially a programme to increase the productivity and power of the fishermen and through this to enhance the protein supplies to the consumers within the State. Fisheries development was not divorced from fishworkers development or the interest of the avid fish eaters of Kerala.

The Indo-Norwegian Project: Drifting without Direction

Even while the Second Five Year Plan priorities were being systematically implemented, the INP was drifting without direction. On the one hand a commitment to the original objectives had to continue, although the Norwegians had reached an autonomous conclusion that pursuing them was leading to a "dead end". On the other hand there was pressure, primarily from Norway, to make a "success" of the project.

With the motorisation of the traditional crafts abandoned even before it was given rigorous trials, the search for the universally usable beach landing craft also was slowly being dropped.[48] The move to construct larger boats with more powerful engines using completely new fishing techniques was well on the way.

By mid 1957 freezing technology was selected for the processing of the fish to be internally marketed. The fish chosen was oil sardine. Experimental marketing was started but we are told nothing about the economics of it. Judging from the 1938 experience of the Government of Travancore there is reason to think that the consumer resistance and the low purchasing power would not have made it viable.[49]

Enter the Penaeid Prawn

When the INP had just started functioning in Kerala in 1953, a private merchant took the bold step of exporting 13 tonnes of frozen penaeid prawns to the USA.[50] This was followed by a swift increase in demand for frozen prawns from Kerala leading to a quantum increase in exports. By 1957-58 five more firms had joined the fray and between themselves had exported 458 tonnes of frozen prawns to the USA. The success of the private entrepreneurs and the inherent interest in a survey of marine resources led in 1956 to a collaboration between the INP and the Centre Marine Fisheries Research Institute (CMFRI) for a assessment of the marine wealth of Kerala. This was perhaps INP's major contribution to the state of knowledge of fisheries. One of the important "discoveries" was that the presently untapped resource of penaeid prawns available off Cochin and Quilon -- both in the shallower in-shore waters and the deep sea -- made the Kerala waters one of the world's richest prawn grounds.[51]

Spurred by this discovery and the rather rapidly increasing market for prawns in the US,[52] the new technique of bottom trawling for prawns and its experimental freezing was undertaken by the INP in 1958 with the objective of making trial exports to the US. The Indian members on the INP standing Committee[53] were against this INP initiative which they felt was

outside the structure of producer control and hence in a sense contrary to the agreement. They urged the creation of a fishermen's sales organisation under whose auspices such ventures could be undertaken. Because of the objection raised the prawns frozen until then were also marketed locally.

Encountering the Fish Merchants with Cooperatives from Above

The comments of the Standing Committee on the need to hasten the creation of a producer based marketing experiment led to the quick formation of autonomous cooperative Sales Organization within the area of operation of the INP in Quilon. This Sales Organization was expected to achieve for the fishermen in Neendakara what similar organizations did for the fishermen of Norway -- assure the producer of a higher price for his fish. To fulfill this all the physical facilities -- ice plants, freezing plants and insulated vans -- were largely placed at the organisation's disposal. The fishermen who had availed of the INP boats were obliged to hand over their catch to the organization at pre-determined prices rather than to the regular fish merchant of the area with whom they had always transacted business.

The Norwegian's apparently underestimated the power of the local fish merchants. They did not understand the nature of the relationship between fishermen and merchant. They also failed to appreciate the fact that these organisations created for the fishermen were unlikely to succeed when compared to the Norwegian Sales Organisations which were created by the Norwegian fisherman, with the assistance of their Government, following long drawn struggles against middlemen and merchants.[54]

The local middlemen and big fish merchants scuttled the functioning of the Sales Organisation by out-buying it when the catches were low and

withdrawing from the shore when there was a bumper catch. A quick succession of such situations and total chaos prevailed. The autonomy of the organisation really meant nothing so long as the fishermen who were registered as its members hardly felt they had a stake in its successful functioning. Both the fishermen and the merchants knew that the INP would prop up the Organisation in times of crisis. The writ of the merchants prevailed.

Balance Sheet for the Decade

The close of the decade saw the INP for the first time in the hands persons from Norway whose fishery expertise was held in high esteem the world over.[55] The change also helped to stall the drift and set right the INP's rudder ... albiet with the resolve to take a new, more decisive course with changed goals.

The beach landing experiments being undertaken were terminated; the new, larger and more powerful "INP Boats" were being produced in the INP boat yard with an eye to developing shrimp trawling and purse seining; many high visibility demonstrations of their performance were conducted; over 100 local fishermen were trained to use mechanised boats thus raising their level of skills; the cooperative Sales Organisation experiencing rough weather was bestowed with a heavy-investment-low-turnover marketing scheme; the demand for ice had generated sufficiently to get the INP plant function at full capacity.

A sum of N. Kroner 27.8 million (Rs.18.4 million in 1959 prices) was spend on the INP from the time of its inception until the end of 1958.[56] Of this, 42 percent was spent on Norwegian personnel and project administration; 30 percent on the fishery section and 28 on the health division. Another way

to present the same is that 82 percent of the expenditure was on Norwegian personnel and capital equipment and the remaining 18 percent were the expenses incurred in India relating to wage costs; operating expenses, maintenance of the equipment; and some investment in research, human and physical capital.[57]

There was considerable concern about the political consequences of such a large scale of investment restricted to a limited geographic area. The extent of the disparity between the project area and outside is evident from the following: the aid per capita in the project area from its inception until 1958 was Rs.474.00 compared to the per capita community development expenses of the Government of India of around Rs.5.00 in the two administrative divisions (blocks) in which the project area was located.[58]

By the end of the decade fish production in the state as a whole increased to average 2,37,000 tonnes. The entire harvest was a result of the efforts of the artisanal fishermen of the State. They were very favourable aided by mother nature[59] and to a lesser extent by the most significant technological change in Kerala's fisheries — the shift from using cotton to nylon nets.[60] In the INP area of the total fish landing of 2080 tonnes about 12 per cent (260 tonnes) was contributed by the harvest of the mechanised boats issued by the INP.[61]

In 1957-58 it was estimated[62] that there were 42,039 fishermen households in Kerala State comprised of 269,064 individuals. Between them they operated 8280 kattumarams, 3173 plank canoes and 8774 dugout canoes. The combined total of fishing nets was estimated to be 61560 with over 16,000 hook and line sets. With the active fishermen in the population estimated to be around 66,000 the output per worker was around 4500 Kg per annum.

The average household income was estimated to be Rs.542 per annum and the average debt Rs.322.

We may surmise that the basic orientation of both the State of Travancore-Cochin and the State of Kerala under the Communist Government was to have fish produced by the masses for the masses. It was hoped that the two Five Year Plans and the INP would provide the financial resources, the new technology and the organisational framework to facilitate this at higher levels of productivity. However, we note that the decade ends leaving the economy in the throes of a change in approach.

PART II

THE SIXTIES: THE EXPORT ORIENTED APPROACH

The early sixties hearlded in the export oriented approach to fisheries development. 'All attention focused on the penacid prawn'. From an export turnover of a little under 500 tonnes of frozen prawns in the end of fifties, by 1961 the figure had reached 1462 tonnes with an export value realisation of over Rs.4000 per tonne[63] compared to the internal fresh fish shore price of Rs.130 per tonne.[64]

In 1962 the Japanese were also scouting for prawn supplies as a response to having lost access rights to Mexican waters. That year they imported 9 tonnes of prawns from Kerala at the phenomenal price of Rs.8900 a tonne.[65] (See Table 1)

This increased export of prawns by private firms to the US and Japanese market; the confirmed location of economically exploitable,

untapped prawn resources off Kerala; the demonstration and introduction of the more catch-efficient technique of bottom trawling[66] by the Norwegians made both the Indo-Norwegian Project and the fisheries administration of Kerala devote their undivided attention to the pursuit of prawns.

The prime agents of change

Contrary to popular understanding it is not the INP which is to be considered as the prime agent (sometimes considered 'villian') of change[67] that caused the shift to an export-oriented strategy.

As we had mentioned earlier it was a single pioneer entrepreneur in 1953 and then a couple more who were daring and innovation enough to make the first initiatives to export frozen prawns to the USA. By the early sixties, the overpowering signals of the market made a new class of more powerful merchant capitalists (whom the pioneers represented) in Kerala join the 'pink gold' rush. This merchant class has had a history of exhibiting the phenomenal ability to convert any commodity into a medium for profit through circulation.[68] Their entry into the fish economy on a large scale was promoted not only by the strong price impulses in the late fifties and early sixties. It was also a response to crises in the trade in other commodities in which they had been traditionally involved.[69] Prawn was perhaps the first commodity which this merchant class handled where they did not first have to dislodge foreign interests.[70] On the contrary, because of the INP, they were assisted by foreigners !

The INP was caught in this current and played a supportive and demonstrative role by providing the technology for more effective harvesting and processing of the resource.[71] By leasing out its facilities to some of the

merchant interests, the INP provided them with an initial "no risks" basis to get a taste of the phenomenon profits in 'pink gold' trade. Having amassed wealth, they soon made their own investments in plant and machinery which in five years (by 1960) was nearly ten times that of the INP.[72]

The Indo-Norwegian Project: Years of Success?

The period 1960 until the close of the INP in 1963 have been characterised as the "turning point" and "success period" of the INP.[73] From years of groping and drifting there seemed to be much action and a definite direction to the course taken.

Our contention here is that:

(a) this 'success' was achieved at the cost of a shift in the direction of the INP which was largely inconsistent with its original objectives.

(b) social and economic forces external to the project and almost totally outside the control of the Norwegians were responsible for steering the INP along this new direction. Under the pressure of these very same forces the "checks" placed earlier on the INP by the Indian counterparts (particularly those from Kerala State) also vanished.

The INP only continued to drift -- it was the current that had changed course.[74]

By 1963 the most notable structural change in the project area consequent to the introduced of the new technology of fish harvesting and processing was the creation of a new class of non-operating entrepreneurs or capitalists[75] who owned the means of production and through this opened up avenues for a large migrant labour force recruited from outside the INP area.[76]

The change in the technology and labour process in the realm of fish harvesting and processing taken together with the entry of this new segment of merchant class interests into the fish economy can be considered as the death knell of the fisheries development policy in Kerala which viewed fishing as a source of livelihood and fish as a source of food for local consumption. The Norwegians played the role of chief pall bearers.

The Indo-Norwegian Project: A Second Phase

On 1st April 1963 the activities and the physical facilities of the INP in the three villages of Shakthikulangara, Neendakara and Puthenthura were formally handed over to the Government of Kerala.

Following this the Norwegians concentrated on their work around the new concept of "integrated fishery complexes". Three such complexes were set up in Cochin (Kerala State) Karwar (Karnataka) and Mandapam (Tamil Nadu). These were established in centres having facilities for harbour development. "Each fishery complex project envisaged introduction of power vessels to undertake commercial fishing operations. The shore installations comprise(d) ice factory and freezing plant, facilities for processing and marketing of fish and also repair and maintenance facilities for boat ."[77]

The complex in Kerala functions under the complete administrative control of the Government of India and is called the Integrated Fisheries Project (IFP). It is an impressive "high-technology fish economy" model within Kerala. The project with a staff strength of 405 undertakes research and survey work and catches fish using its own large vessels, processes it using modern facilities and has its own marketing channels for the sale of the produce. It is however a 'model' which has had little possibility

for creating either spread or demonstration effects outside its own walls. Its bureaucratic links with New Delhi and its technology links with Norway are stronger than its contacts with either fishermen's organisations[78] or the fish trade channels in Kerala State.

The style of functioning of the Integrated Fishery Project in Cochin has precluded the possibility of the Norwegian intervention per se having a large influence on the dynamics and direction of Kerala's fish economy in the post 1963 period. What little can be attributed to it in this period would only be from the "hang-over" effect of the involvement in the first phase. Considering that the IFP was totally indigenised it would stand to reason that if a pattern of fisheries development encouraged by the Norwegians was continued, the responsibility must now rest totally with the Indian administrators and the local economic interests who continued to support it without question. We would therefore argue that any analysis of trends in Kerala's fish economy in the post-1963 period should be undertaken without assigning a determining role to the Norwegians. This should not however be considered as absolving them of the historic role they played in introducing a sharp dualism in the fisheries sector of Kerala. This dualism and the consequent polarisation in the economy and a marginalisation of the bulk of working fishermen in the State are the hall marks of the two decades following the completion of the Indo-Norwegian Project in Kerala which we will take up for discussion below.

The Export Orientation and Kerala's Fish Economy

The effect of this overpowering demand-pull for prawns had its repercussions in Kerala's fish economy as a whole. A sector which was relatively outside the mainstream of the economic and social processes in Kerala society

was suddenly transformed into a respectable avenue for investment and involvement. The possibilities of a "Modernised" fishery sector emerged quickly breaking down traditional barriers to entry[79] into the sector. The export-oriented thrust that began to get entrained in the sector was blessed by the country's own attempt to boost foreign exchange earnings. The devaluation of the rupee in mid-1966 gave a further boost to the exports of prawns from Kerala.[80]

The prawn export euphobia had its immediate effect on state policy reflected best in the state's plan expenditures during the period 1961-69. Of the total Rs.110 million spent on fisheries development during this period Rs.82.5 million (75 percent) was spent on production oriented schemes Rs.54 million of which went for financing mechanised boats equipped primarily to fish for prawns and Rs.20 million for supporting infrastructure and training facilities. As much as Rs.20 million (18 percent) was used to finance processing and marketing oriented schemes out of which Rs.10 million was directed towards creating facilities and organisations which were explicitly export-oriented or directly facilitating the export drive.

While the above only represents the investment made in the public or cooperative sector, the pace at which the private sector developed was also phenomenal. We have no estimates for the whole of Kerala but the change in the INP area mentioned earlier gives a picture of the trend.[81]

A very simple investment-output comparison for the decade of the sixties shows that for the Rs.92 million spent by the state between 1961-69 for investments directed towards export oriented fisheries, an export value of Rs.909 million was realised between 1962-69.[82] Compared to this, for the Rs.8 million spent by the state to improve the artisanal fishery methods

and augment facilities for internal marketing during the same period (1961-69) the fish harvested by the artisanal fishermen was approximately 2.5 million tonnes valued at ₹6.942 million. It is also crucial to note that between 1961-69, of the 237 tonnes of prawns landed as much as 70 percent were caught by these artisanal fishermen.[83]

State fisheries policy and investment priorities had come to be swept along with the rising tide of the export drive. The new emphasis was to (a) augment the harvesting capacity by providing subsidies for mechanised boats used for trawling and (b) to build up the human and capital investments essential for their operations.

The State's attempts to continue linking the mechanisation programme with the creation of producer's cooperatives was watered down to mere lip service. On paper the mechanised boats were issued only through producer cooperatives or to groups of fishermen. In reality however the cooperatives, whose mere numbers increased rapidly, were dominated by financiers and middlemen and were indeed far away from being genuine fishermen's organisations.[84] Mechanised boats issued by the government were registered in the name of the fishermen but in reality fully controlled by the plethora of financiers and middlemen.[85] The latter had found a new niche in the export drive by mediating between the new semi-proletarianised fishermen and the nouveau riche merchant class that had entered the prawn export processing business. They primarily controlled the sale of the produce from the mechanised boats and some went on to establish unorganised prawn peeling sheds after having attained sufficient control over supplies.

The investment in building harbours, breakwaters, guide lights and providing the training for fishermen to operate the mechanised boats was also the exclusive domain of the government.

In essence what we observe is that the more risk prone, capital intensive, low-return investments were made by the state while the realm of the export business came to be largely concentrated in the hands of the private sector. This was a strategy most suited to the new segment of the merchant class in the fisheries sector.

The attempt by the State to maintain a commanding presence in the processing and exporting of prawns by the establishment of a giant corporation — the Kerala Fisheries Corporation (KFC) — to be run along business lines also resulted in utter failure. This was partly due to the inability to run a business venture on bureaucratic lines and partly due to the fact that any step by the KFC to make its presence felt in the market was scuttled by the private trade interests. By the end of 1983 a sum of Rs.44 million[86] had been invested in this jaugernaut. In turn its business operation had yielded a loss which was in excess of its total asset value.[87]

Balance Sheet for the Decade

The implications of the changing emphasis of fisheries development policy on the fish economy and in particular the fishermen is not known to us in detail from primary survey data.

It can be said that two clearly demarkated sub-sectors had been created in the economy — one which now received all the attention of the state and the new enterprising merchant class and another which was left

largely to its own survival. The first which we may now refer to as the "modern sector" is made up of the mechanised boats in the realm of production and the more capital intensive and export oriented processing and distribution activities. The latter is what we referred to earlier as the "traditional sector" composed of the non-mechanised crafts and the labour-intensive, internal market oriented distribution and processing activity.

During the decade, fish production averaged 304'000 tonnes. As of 1969-70 the modern sector in fish production activity accounted for landings of 40,000 tonnes of fish/prawns (12 percent), valued at Rs.41.5 million. It gave direct employment to about 7800 fishermen. The output per worker in the sector (accounting for 8% of the active fishermen in the state) was 5150 Kg and his per capita income (current prices) was Rs.1,600. At the same time the 90,600 fishermen operating non-mechanised craft accounted for 88 percent of the total fish landing in 1969-70 (303,000 tonnes, valued at Rs.165.5 million. The output per fishermen in this sector was 3340 Kg or 35 percent below his counterpart on the mechanised boats and his per capita income (current price) was Rs.1095.[88/] (See Table 2)

In brief, the sixties was one marked by a gradual process of polarisation of the economy. The effect of this was to be quickly felt in the subsequent decade.

PART III

SEVENTIES AND EARLY EIGHTIES: GROWTH AND STAGNATION

In less than three quinquenium starting from 1970 Kerala's fisheries had witnessed its greatest rise and fall. The decade of the seventies witnessed the highest ever fish landing and prawn landing in Kerala -- 448,000 tonnes and 84,700 tonnes respectively in 1973 -- and also experienced the stagnation and sharpest decline in the growth of overall catch. In the post 1974-76 period the decline in fish landing was of the order of 6 percent per annum. Oil Sardines and mackerals, once the main stay of the fishery plumped to all time low levels. From a peak of 250,000 tonnes in 1968 (oil sardine and mackeral) the combined harvest touched a low of 112,000 tonnes in 1975 and reached a rock bottom of 87,000 tonnes in 1980. Fish production was 279,000 tonnes in 1980 - the lowest since 1961. (See Figure 1)

Marine products exports from Kerala on the other hand increased from 22,792 tonnes in 1969 valued at Rs.277 million to 31,637 tonnes in 1979 valued at Rs.1096 million. Prawns accounted for the highest share of volume and value of export. Kerala's share in the all-India marine exports declined. (See Table 1)

Investment Growth Despite Stagnation of Production

This stagnation and decline in the fish landing becomes more prominent when seen against the background of increased investment of mechanised boats -- small trawlers, (for harvesting prawns) and purse-seiners (for harvesting oil sardines). The total number of mechanised boats by 1979-80 was estimated at around 3500 -- more than double the number at the beginning of the

seventies. The increase in fishing power did not result in a commensurate increase in the fish catch. This picture is made further depressing when we realise that during the decade both the number as well as the fishing assets of the artisanal fishermen also increased significantly. Going by aggregate counts of traditional fishing craft alone the increase was of the order of around 10 percent from 30,594 in 1972 to 34112 in 1979. The number of artisanal fishermen increased from around 90,000 to 1,06,000.

The growth of investments in the two sectors have however been prompted by different factors:

In the Modern Sector

In the modern sector it was the spiralling prices of prawns following the increased demand from Japan which lead to the rather anarchic growth of mechanised boats and processing facilities. It was also this that kept most of the units just above breakeven point.

The aftermath of the oil crisis made Japanese fishing in distan waters rather uneconomical and the proclamation of EEZ's made many potential fishing grounds inaccessible to them. The policy of cultivating sources of supply for prawns on a world wide basis was consciously adopted by them. The strategy of gaining entry by out-buying the competitors was frequently resorted to.

From a mere 9 tonnes of frozen shrimp from India in 1962 (all of this came from Kerala) the Japanese were importing 5313 tonnes in 1969 at a unit price of Rs.17340/tonne. In 1971 they emerged the principal buyers (replacing the USA) by importing 11,575 tonnes at Rs.17700/tonne (compared to US

rates of Rs.9100/tonne) and by 1982 imported 37713 tonnes at the phenomenal Rs.62370/tonne.[89] (See Table 1)

For the Kerala merchant exporter, selling to the Japanese meant price and freight advantages and also a higher yield from the wet weight due to the particular Japanese product specification.[90] Further, the Japanese tastes for cuttle-fish and squid -- both varieties of cephelopods available off Kerala's waters but which had a restricted internal market -- enabled processors to enhance their freezing capacity utilisation. It was only after 1975 that the Japanese began importing those items from Kerala.

As in the sixties, the pattern of state investment priorities continued to reinforce the growth of the private sector. Plan expenditure during the seventies doubled to Rs.209 million of which Rs.57 million was spent for the issue of mechanised boats; Rs.14.4 million for supporting infrastructure development and Rs.4 million for export oriented investment in marketing and processing.

The entry of the big business houses and the multinationals into the marine export trade enhanced the growth of processing facilities[91] and further spurred the growth of the investments in the harvesting of prawns from the in-shore waters in a bid to keep utilisation rates of the processing facility high. A vicious circle had set in and the common property nature of the resource prompted an unchecked and indiscriminate expansion of the fleet.[92] With the increase in the boats the number of fishermen employed in the sector increased more than proportionally.[93] Even if we assume that the old ratio of 5 to a boat was maintained it meant 17,500 workers. While their physical output dropped from the 1969-70 level of 5150 kg to

3680 kg per annum in 1979-80 their per capita income in current prices rose to Rs.8000 per annum[94] due to the phenomenal rise in prawn prices. (See Table 2)

.....and the Traditional Sector

The rationale for increased investment in the traditional sector of production -- particularly in gear types -- arises both from the increasing numbers of active fishermen and is the result of their response to a fall in their share of the total output. Between 1969-70 and 1979-80 this sector's share of the total output fell from 88 percent to 62 percent and the absolute quantity dropped from 303,000 tonnes to 190,000 tonnes. During that period the output per fishermen plunged from 3,340 kg. per annum to 1,780 kg. -- a fall of about 47 percent. The increasing investment in gear was therefore a means of attempting to possess as many different types so as to maintain their levels of productivity.[95] (See Table 2)

The most recent trend which began in 1980 has been the rapid motorisation of all types of traditional crafts with outboard engines. The diminishing inshore resources, lower per capita yields, the urge for speed and the aggressive marketing of the Japanese multinationals have made this motorisation phenomenon take the shape of a tidal wave. Along with this also comes the new pressure to develop better beach landing craft.[96]

However, confronted with an absolute fall in the share of the output such measures only prove to be counter productive.[97] At the close of the decade, the per capita annual income of the over 100,000 artisanal fishermen was a mere Rs.1527 (current prices). In real terms it would be much less than their income a decade ago.

Balance Sheet for the Period

Two of the most striking features of the period are the growing complexity of the economy and the differential impact of the stagnation on the various actors involved in it.

From a scenario with only caste-bound, marginalised actors the stage is now also occupied by a new class of merchant entrepreneurs, Indian big business houses and local units of multinational corporations.

Going on the assumption of one owner-entrepreneur per boat, in the modern sector, the gross earnings per owner, in 1969-70 was Rs.18,670 and it increased to Rs.93,680 in 1979-80. Even allowing for a 50 percent deduction for variable and fixed costs, the net profits are substantial. (See Table 2)

In the processing sector we find that in 1975 there were 99 registered exporting firms -- mostly family controlled partnerships concerns -- accounting for an export turnover of Rs.464 million. Twenty-three of these firms had annual sales of Rs.5 million and over. They accounted for 79 percent of the total export turnover from Kerala. By 1982-83 the number of firms increased to 114 and 48 firms which had annual sales of Rs.5 million and over cornered 93 percent of the total export turnover of Rs.1133 million.[98] Most of the smaller firms which were "set up" by the multinational corporations faced considerable problems when the latter gradually pulled out from Kerala to other states.[99]

The workers on the mechanised boats were much better off than the fishermen using artisanal crafts. However, their income even in current prices had dropped by the end of the decade. (See Table 2) Little is

documented about the numbers involved in the processing sector. While considerable employment has been generated in this sector it is equally true that most of it is undertaken on a casual, piece-rate basis and largely by young girls.[100]

Average shore prices of fish soared from Rs.549 per tonne in 1969 to Rs.2990 per tonne in 1982. (See Table 3) The retail prices are generally marked up by 50-150 percent depending on the location of the market and the specie of fish in question.[101] This increase of fish prices is at a more rapid pace than the general price levels and also the price levels of other animal protein sources such as eggs, milk and beef. For the relatively poorer sections of rural Kerala, particularly the agricultural households, this must have had a distinct bearing on their nutritional standards.[102] Among the middle and higher income households there is evidence of a shift to other more readily available and cheaper sources of protein.[103]

The rather deplorable state of the quality of life of fishermen even after 25 years of planned fisheries development and over a decade of phenomenal growth in exports was documented in a survey undertaken for the whole state in 1979.[104]

There were 118,801 fishermen households (marine and inland) and 111,420 full-time active marine fishermen. Of the total households only 3 percent had incomes above Rs.3000 per annum and 50 percent had income below Rs.1000 per annum.[105]

It was estimated that about 80 percent of them own at least their homestead land. About half (owned) thatched houses, a third have semi-permanent houses (Katcha) and the remainder live in houses constructed of brick.

Only 10 percent have their homes electrified and fewer have separate toilet facilities. Only a third of the total households have drinking water facilities within the ward in which they live.[106] (See Table 4)

The stagnation and decline of the decade was not only the breeding ground of squalor and poverty but strong waves of dissent and protest as well.

SECTION THREE

CRISES AND QUESTIONS

The questions being raised about the fish economy of the state today are many. The crucial ones are the same as raised by Francis Day a century ago. The vital difference ofcourse is that the economy is today very deeply engulfed by capitalist forces of development and that the questions are now asked by the fishermen themselves.

Starting with the initiatives of the Norwegians, spurred by the stronger and more compelling market forces that unleased themselves from the early sixties and combined with state patronage for the same, the economy has undergone a very marked technological polarisation. This in turn has not only resulted in a concommitent economic and social polarisation of the type we have attempted to describe above but also an ecological crisis which has jeopardised the future of the whole sector. There have been considerable discussions and debates on whether or not the indiscriminate fishing during the seventies had lead to overfishing of the resources.[107] However the luxury of debates has remained inside the walls of the research organisations while the artisanal fishermen affected by decline in their output and income have taken the matter to the streets.[108]

The Fishermen's Agitation

From 1981 onwards an annual feature in Kerala in the month of May has been the upsurge of the artisanal fishermen demanding for their fundamental rights to a livelihood and guarantee of a sustainable future which will not be jeopardised by social forces which have their eyes on fish resources primarily for making quick profits. An efficient technology controlled by such interests becomes a destructive tool they argue, alluding

to what they consider to be the ecological degradation of Kerala's coastal waters due to unregulated and indiscriminate bottom trawling for prawns and excessive purse-seining for oil sardines and mackerals.

While their movement has not been without contradictions[109] the consistent demands of the artisanal fishermen over the years have been a call to;

- proclaim an exclusive economic zone for small scale fishermen
- ban of destructive fishing techniques
- and a systematic regulation and management of the living marine resources of Kerala.

In this context the pioneer role of the INP as a key participant in initiating the prawn rush and the trawler boom have come in for severe criticism by them.[110]

Less Fish for Local Consumption

The spiralling prices of fish largely due to its short supply vis-a-vis the growing demand in the State has led to questioning the state policy of heavy investments in the harvesting activity which in turn have not yielded fish for food to local consumers. In fact, as we have shown, the period of rapid introduction of mechanised boats in the 1970's was also the phase of a steady decline of fish production. (See Table 3) The per capita availability of fish dropped from 15.2 kg in 1956-58 to 9.2 kg in 1982-83.

Constructive

Private versus Social Profitability

At the macro-level we see that the heavily state financed mechanisation of fishing has led to raising of productivity. This in turn has ensured a higher level of earnings to the fishermen working on the boats and more obviously a sizeable profit to the capitalists -- particularly the boat owners and the merchant exporters. However this predominant pattern of ownership of the boats and the nexus between mechanisation and prawn exports has greatly detracted from the modern sector's potential to become desirable from the stand point of the overall economic and social considerations of Kerala society at large. This is particularly so when viewed from the three important considerations of: providing cheap protein for local consumption; ensuring a more decentralised mode of functioning and greater spread effects with regard to employment generation.[111]

The largely self-financed, non-mechanised artisanal sector in fishing can be highly desirable from the standpoint of its social profitability,[112] but it is unable to provide its incumbents with the required levels of productivity and the socially necessary accumulation to assure them the possibilities of a sustained income even for mere survival.

Need for New Perspectives

The need for new perspectives and concrete alternative approaches is being very acutely felt today. However fresh initiatives cannot be merely a tinkering with the old approach and framework which has brought us to the present crisis. There is a need to create a future which ensures a development process which is sustainable, just and participatory.

In this paper we will only allude to the areas which we consider to be key to the framework for the future.

Our basic premise is that there is need to raise productivity and ensure a fair distribution of the gains. To achieve this it would be necessary to give attention to the following:[113]

(a) Management of the marine resource
(b) Generation of appropriate and appropriable technologies
(c) Use of multiple energy sources
(d) Exercise of greater producer control over the marketing of fish
(e) Search for new employment alternatives for fishermen.[114]

Resolving Conflict

The malaise that has infected the fish economy of Kerala has today reached a point of high crisis. In a democratic polity, functioning in the overall capitalistic framework of society, the vote-bank strength and the economic clout of the various interest groups involved must necessarily be carefully balanced.[115] The crisis in fishing in Kerala is also a reflection of the larger socio-economic and political crisis in the State. Hence its resolution also will necessarily involve a political process of give and take. The onus of making hard decisions regarding the future policies for the fisheries sector have been momentarily set aside by instituting expert commissions to examine the questions and suggest remedies.[116] Meanwhile some interest groups have also resorted to legal measures to seek justice.[117]

Are the Norwegians to blame?

A question that has been constantly raised in the recent past both in India and in Norway relates to the extent of Norwegian responsibility for the crisis in Kerala's fish economy. An answer to this would depend on how one understands the dynamics of a bubble on a stream. Given that, we also seem to think it matters whether the question is to be answered by a Norwegian or an Indian.[110]

In our understanding the INP, despite its pioneering nature, must be seen as an intervention which hastened rather than initiated socio-economic change. Its role was essentially catalytic in the 'chemical process' resulting from the interaction between penaeid prawns and profit potentials the result of which was prosperity from a few and pauperisation for many.

It would therefore follow that Norwegian or no Norwegian, the export orientation in Kerala's fish economy and its concommitant consequences would have developed -- probably at a little slower pace and on a more capital intensive basis.

In the post-1963 phase, when the Norwegians had withdrawn into the shell of their Integrated Fishery Project, the active interaction of the prawn hungry Americans and the Japanese, together with the profit hungry Kerala merchant capitalist class unleased the 'pink gold' rush. If the Norwegians had not by then played the 'catalytic role' of demonstrating the effectiveness of bottom trawling (using relatively small boats) and methods of processing, we are of the opinion that the imperatives of the market would have ensured that the Americans, Japanese or more likely organisations like the Food and Agriculture Organisation (FAO) of the United Nations

would have done so.[119] That is, if the merchant capitalist class in Kerala could not rise to the occasion.

In the context of continued assistance for fishery development projects in India by the Norwegians — but now, unlike with the INP, at the request of the Government of India — the responsibility to weed through old experiences to learn new lessons is an essential exercise. It would seem that on the part of the Norwegian aid bureaucracy and the public there is a fresh beginning in this direction.[120] From the Indian part we need a more thorough going introspection which will look into techno-economic, ecological, demographic and socio-political dimensions of our fish economy. Our views on future aid and technical assistance from abroad must develop both from the analysis of the above and the perspectives which emerge about an action programme for a more sustainable, just and participatory fisheries development in Kerala and India.

Table 1

Export of Frozen Shrimp/Prawn from India*

Quantity = in tonnes
Value = Rs.millions
Price = Rs. thousand/tonne

Year	To JAPAN Quantity	Value	Price	To USA Quantity	Value	Price	TOTAL Quantity	value	Price
1953		No exports		13	Not available		13	Not available	
1957		No exports		Breakup	Not available		496	Not available	
1962_D	9	0.1	8.9	2055	9.8	4.8	2238	10.8	4.8
1966	1005	11.9	11.9	7100	69.4	9.8	8784	88.8	10.1
1967_J	2590	41.6	16.1	7957	79.8	10.0	11173	129.8	11.6
1971_O	11575	205.3	17.7	9504	86.7	9.1	23181	313.3	13.5
1974	19174	390.3	20.1	12681	200.3	15.7	34361	637.3	18.5
1979	36583	1727.0	47.2	13117	357.8	27.3	53511	2231.2	41.7
1982	37713	2352.3	62.4	11256	399.7	35.5	54625	3009.7	55.1

D -- Devaluation of the Rupee

J - Japan becomes main buyer

O -- Oil crisis

* Note: Until 1970 Kerala's share of the quantity of export of frozen shrimp/prawns from India was over 95 per cent. In 1982 it was only 50 per cent.

Sources: Kerala State Planning Board 1969

MPEPC 1970

MPEDA 1978, 1984

Distribution of the Volume and Value of Output in Kerala Fisheries between Sectors and Classes (1969-1980)

Year	Volume (in thousand tonnes)	Value of output (in Rs. million)[1]			No. of workers[3]	Output per worker (kg)	Per Capita income of workers (Rs)	Output per worker (Rs.)
		Total	To owners[2]	To Workers				
1	2	3	4	5	6	7	8	9
			M E C H A N I S E D			S E C T O R		
1969-70	40	41.5	29.0	12.5	7,765	5,150	1,610	5,344
1974-75	143	322.8	226.0	96.8	11,260	12,700	8,597	28,668
1979-80	115	468.4	327.9	140.5	17,500	3,880	8,029	18,737
		N O N - M E C H A N I S E D				S E C T O R		
1969-70	303	165.5	66.2	99.3	90,660	3,340	1,095	1,826
1974-75	277	311.8	124.7	187.1	99,105	2,800	1,808	3,146
1979-80	190	271.4	108.6	162.8	1,06,625	1,780	1,527	2,545

Notes: 1. Two year simple average in current prices

2. In M-Sector assumed that owners get 70 per cent of gross earnings. Actually they get 70 percent of 'divisible earnings' which is gross earnings minus operating costs which are commonly shared. Operating costs account for a sizeable part of M-Sector gross earnings and have varied over time. Hence the figures are on the high side. In the NM-Sector assumed owners get 40 per cent of gross earnings. Here again for the same reason give earlier the figures are on the high side. However operating costs in NM-Sector much smaller fraction of gross earnings.

3. From 1971 the total number of 'Ocean, Sea and Coastal Fishermen' ascertained. Total number for prior and subsequent years estimated using 2.3 percent growth rate of labour force (T). M-Sector workers estimated by multiplying number of boats during the period by five (M). Non-mechanised sector workers are (T)-(M). M-Sector workers likely to be under estimated particularly for 1974-75 and 1979-80 when it is known that as many as 7-8 persons were attached to a boat although on any trip only 5 participated.

Source: Kurien 1984 d.

Table 3

Volume and Value of Marine Fish Production in Kerala

Quantity = thousand tonnes
Value = Rs. million
Price = Rs./tonne

Year	Quantity	Index of quantity	Value	Price	Index of Price
1961	268	100	35.0	131	100
1962	192	72	28.9	151	115
1963	203	76	41.5	205	156
1964	318	119	67.6	213	162
1965	339	126	68.5	202	154
1966	347	129	94.7	273	208
1967	364	136	105.7	290	221
1968	345	129	100.8	292	222
1969	295	110	161.8	549	419
1970	393	147	252.1	642	490
1971	445	166	292.9	658	502
1972	295	110	224.8	762	581
1973	448	167	491.3	1097	837
1974	420	156	529.5	1260	962
1975	421	157	739.7	1757	1341
1976	330	123	560.2	1697	1295
1977	345	129	658.5	1908	1456
1978	373	139	783.1	2098	1601
1979	331	123	648.5	1962	1497
1980	279	104	831.1	2978	2273
1981	275	102	822.2	2990	2282
1982	325	121			

Source: Kurien 1978a till 1976 thereafter own calculation based on quantity figures of CMFRI and price data from Economic Review of Government of Kerala 1977-1983.

Table 4

Indicators of the Quality of Life of Fishermen Households in Kerala and Quilon District

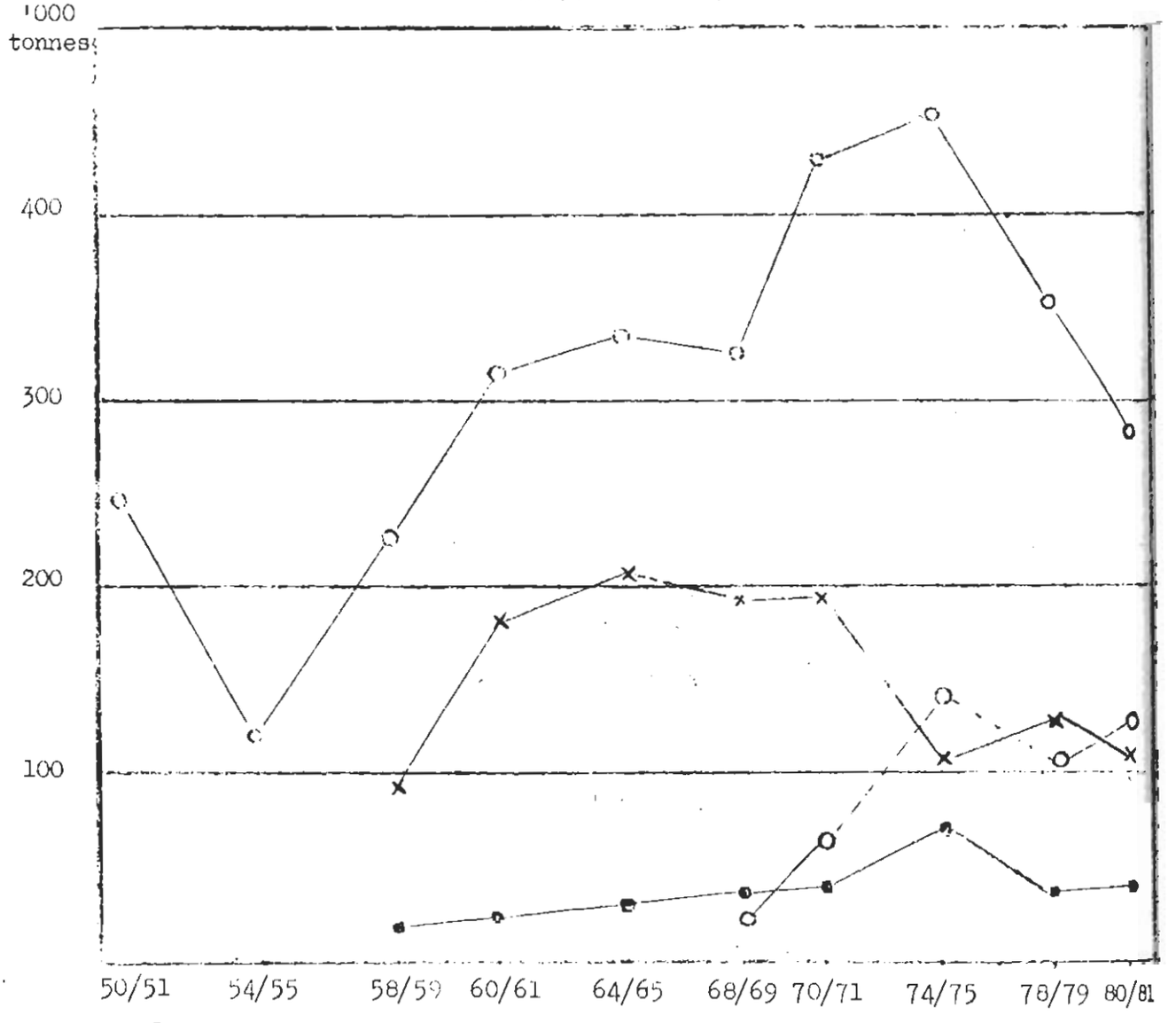
	Percentage of active marine fishermen to total population	DISTRIBUTION OF INCOME		SPREAD OF SOCIAL FACILITIES					ALTERNATE EMPLOYMENT
		Proportion of		The proportion of Households					
		Household with less than Rs.500	Household with more than Rs.3000	Owning house sites	Living in Katcha or Pucaa Hans	Having houses electrified	Having water available in ward	Having separate latrine facilities	Members in activities other than fishing
All Kerala	20.24	12	3	80	52	10	33	5	5
Quilon District	17.91	7	6	80	55	14	42	10	5

Source: Government of Kerala, 1983b.

Figure 1

MARINE FISH LANDINGS OF KERALA STATE

(1950/51 to 1980/81)



(Two-year averages chosen at three points in each decade to smoothen the fluctuations)

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NOTES

1. Literature on the Sangam Era says that 'Thamizhagam' (which includes the region that is now Kerala) was divided into five 'Thinais' and one of these — the coastal Thinai — was inhabited by tribes called Parathvars, Velayars, Meenavars and Nulayara whose main occupation was fishing, salt making and pearl collecting.

2. Friar Ororic who sailed down the south west coast of India in 1320 observed "there are fishes in those seas that come swimming..... in such abundance that for a great distance into the seas nothing can be seen but the back of fishes, which casting themselves on the shore, do suffer men for the space of three daies (days) to come and take on many of them as they please" Quoted in Day: 1865.

3. From a discussion with Dr.C.C. John former fisheries advisor to the State of Travancore-Cochin.

4. Day 1865.

5. Given as 2 cwts per acre in Velu Pillai 1940 p.433.

6. Velu Pillai 1940 p.433.

7. Narayanan Thampi 1942 p.104.

8. Velu Pillai 1940 p.433.

9. 'Valavisu Puranam' an ancient Malayalam treatise contains several references to the method of fishing in vogue and to the arts and sciences relating to fishing.

10. Catamarams are of either Egyptian and/or Polynesian origin; the high board dugout canoes made by addition of planks stitched to the dugout are purely of Arab influence; the dip nets are of Chinese origin; the boat seine is unmistakably Spanish and the shore seines were first introduced by the Portugese. The fact that the nets were 'selective' and the craft were small, placed certain inherent constraints to raising the productivity (output/unit).

11. Mathur, 1978 makes a good starting point of recording the knowledge of the Muslim fishermen of Malabar.

12. Day 1865 p.ix.

13. ibid. p.xvi.

14. ibid. p. xix.

15. ibid. p. viii. quoting from a person referred to as Dussumier writing in 1827.

16. ibid. p. xxi and xxv.

17. ibid. p.xv.

18. Report of the Banking Enquiry Committee, Travancore 1930, Vol.1, Trivandrum 1930 p.79.

19. Achyutha Menon 1937.

20. Paramupillai 1935.

21. ibid.

22. Day: 1865:, p.xv, xx.

23. C C John fisheries advisor to the State of Travancore-Cochin elaborates this point in a dissent note made by him during a National Planning Committee on Fisheries. See footnote 27 and 28 below.

24. Two such curing yards were established in Neendakara and Puthenthura before the Norwegians started the IMP. The curing yards became the main contact point between the fishermen and the fisheries administration. The officer-in-charge called the Petty Yard Officer kept closed contact with the fishermen. This post of Petty Yard Officer continues in the Kerala Fishery admini tration though the curing yard programme was gradually shelved from 1964 and none exist now.

25. Narayanan Thampi, 1942 p.104. The year referred to is 1940.

26. Velu Pillai, 1940 p.435. Prawns were caught by the fishermen. It was an inexpensive item. Most of it was dried and exported to S-E Asian countries and during the glut it was used as manure for coconuts. The local consumption of prawns was not much partly due to the then popular association of stokach disorders and allergies with prawn consumption.

27. Shah 1948.

28. C.C. John represented the Government of Travancore.

29. See Sandven 1959; Klausen 1968; Asari 1969; Galtung 1969, 1984; Pharo 1980, 1984; Platteau 1984.

30. This was the first supplement to the main agreement between the United Nations, Government of Norway and Government of India signed in October 1952 in New York following which a Norwegian delegation visited India and decided to embark on the project in the Southern Indian State of Travancore-Cochin.

31. This observation from Pharo 1980, who was commissioned in 1976 by the Norwegian Ministry for Development Cooperation to write the history of the IMP. It was thought that with an aid project which would promote "peace and stability through economic growth" the foreign policy of the government would acquire a more positive image particularly in the context of the domestic criticism against NATO membership, Pharo: 1984 quotes the main advisor to the Foreign Minister of the time as having recorded in his diary while commenting on the Norwegian Aid plan to India -- "Good plan, it is necessary to give to people something of a positive nature to supplement high defense expenditure".

32. The emphasis on a limited geographic area stems from the need to "see" the change effected by their involvement. For convincing the Norwegian public even through photographs and films it was important to have a direct relationship with a particular area and a fixed set of people.

33. Pharo 1980 mention that fisheries was considered to be "too problematical" an area and hence this instruction. However it seems strange that a country which was world reknown for its fishing industry would not have wanted to undertake in aid project in this sector. We would hazard two guesses to solve this riddle. One possibility is that developing a fishery industry of another country was considered a threat to Norwegian fish exports -- particularly stock fish exports to countries in Africa. A second possibility, and this seems the more plausible explanation for the a priori instruction, is that the Chairman of the Board of Directors of the India Fund H.U. Sverdrup and the Norwegian Director of Fisheries, Klaus Sunnana were not in the best of terms (Pharo 1980). Given this, it is understandable that choosing a fishery project in India would compel the Fund to seek advice from the Directorate of Fisheries which would be hardly forthcoming in the context of the strained relationship between Sverdrup and Sunnana.

34. Given that the Norwegians finally settled for a fishery project and in an area that was climate-wise most unsuitable for the Norwegians, only goes to show the extent of political pressure that existed to start an aid project -- any project. The reversal of the Board decision not to involve in a fisheries project was probably possible only because Sverdrup himself was a member of the delegation to India.

35. The spirit of the community development programme initiated in October 1952 was at a high ebb. Jawaharlal Nehru was behind it and even the communist and socialist parties in India had no effective critic to offer on its contents. The objectives of community development projects were: (Dube 1960)

    (a) to provide substantial increase in the country's agricultural production and for improvements in the system of communications, rural health and village education.

    (b) To initiate and direct a process of integrated cultural change aimed at transforming the social and economic life of the village.

36. The similarity between these objectives and the community development objectives is obvious.

37. The development concerns of the Government of Travancore had for long centred around more than a mere raising of incomes. Health, education and the improvement in the general quality of life were explicit in the programmes of the government. Today the region of the erstwhile State of Travancore is reputed for its high health and literacy standards despite the relatively low levels of income.

38. As indicated in footnote 34 above the Norwegian's had very little choice but to accept and also largely on the terms dictated to them. Though this may seem strange, it was part of the compromise they had to make in order not to be faced with the politically unacceptable proposition of returning to Norway empty-handed.

39. Clause 2 (a) of the First Supplement to the Main Agreement.

40. The plea of the Norwegians about the need for a concentrated effort in a small area on a pilot basis was accomodated by the Government. Clearly the political palatability was low for such a pilot project loaded with a heavy dose of funds when the area outside remained without any. If the Government agreed to accomodate the INP style of functioning it was at a considerable risk. The calculation was that the payoff in terms of demonstrable results would be substantial. When this was not forthcoming an air of conflict built up.

41. The lack of expertise and skills was most evident in the realm of fisheries! The technology which was transferred -- the vessels for example -- was unsuitable to the climatic and oceanographic conditions. The Norwegian fisherman who came to the INP also had inadequate knowledge of the fishing grounds, bottom conditions and the behaviour of fish in the tropical waters. This situation did not help to create confidence among the Travancore counterparts.

42. The level of technology and skills needed to undertake this experiment was certainly available in India (See Footnote 44 below).

43. The alternative craft -- a 22 ft flat keeled boat with 4-5 HP engines was neither technical or economically superior to the traditional canoes. Though labour productivity was higher the resultant net income, because of the fuel costs, was much lower than that of the canoes. Taking the figures given by Asari: 1969, but making corrections to his calculations by separating for income to owners and/or owner-workers and income to crew, we note the following:

Economics of small fishing craft 1959-62

	Traditional		
	small canoes	Big canoes	INP 22 ft Boat
Investment (Rs.) (1953 prices)	1000	2000	2000* (subsidized)
Average Annual catch (kg.)	8603	8010	8841
Gross Income (Rs.)	2389	3667	3643
Net Income (Rs.)	2032	3148	1683
Crew Size	5	10	3 or 4
Output/Crew (kg)*	1720	801	2210
Workers share (Rs.)*	245	190	215
Owner's share (Rs.)*	810	1260	1130
Owner-workers share (Rs.)*	1055	1450	1345

*(Our calculations based on crew: owner sharing of net income in ratio 60:40 for traditional boats and 40:60 for INP boat)

It is evident from this that the differences in earning of owners was clearly not high enough on the 22 ft boats to warrant a big shift in favour of it. It was a rational decision not to accept the new technology. Sixty-seven such boats were however constructed by 1956-57. Fishermen who were given the boats accepted it -- some made good and concealed the fact from the INP authorities.

44. The fact that this was done in Saurashtra and proved to be successful only goes to reinforce the doubt raised with regard to the Norwegian conclusion about the inability to motorise the canoes in Quilon. In fact today the very same canoes of Quilon are being motorised with more powerful outboard engines. However one may contend that even if the Norwegians did show that it was technically feasible to motorise the canoes, given that the prices of fish remained very low, the experiment would have met the same fate as the 22 ft flat bottom boats. In Saurashtra the fact of inshore pomfret resources and the large demand for them from the Bombay market perhaps in no small measure account for the success of motorisation there.

45. The fact that the INP did not even consider taking up this activity of improving 'traditional' processing in which they had very useful experience casts a cloud of doubt on the purpose of shunning it. It is interesting to note that in the late sixties a nutrition programme among children in Kerala used 'fish powder' which was made from the entrails of fish and imported from Norway as a gift!

46. Particularly the clearly stated objectives.

47. See Kurien 1978a. Essentially we are referring to the base of a fish economy matrix composed of three activities (columns) -- production, processing/marketing and consumption -- and three sectors (rows) -- traditional, modern and ultra-modern. The traditional sector is at the base. Traditional production refers to the small-scale artisanal fishermen, their equipment and activity; traditional processing and marketing refers to processes such as curing and drying and the labour-intensive marketing network of fish distribution; traditional consumption refer to the consumption by rural and urban poor and the middle-class who form the bulk of the consumers. In brief it is a sector where production by the masses is for consumption by the masses.

48. In the first place the very search for a "universal" beach landing craft was doomed to fail given the very wide variability in sea and surf conditions even across very short stretches of coastline. The Norwegians did not get the opportunity or did not want to appreciate the rationale behind the wide diversity in craft design even within the short coastline length of Travancore.

49. The choice of oil sardine for freezing was in itself inappropriate due to the high oil content of the fish. Sandven 1959 states that in the monsoon months of 1956 15 tonnes of frozen fish were sold and in December 12 tonnes of fish were sold. With 4 insulated vans of 8 tonnes capacity per trip this was gross underutilisation and very high costs which certainly could not be borne by the market --- not to mention the resistance to frozen fish which continues to this day (see Kurien 1984c) Compared to this the 1938 experiment of the Government of Travancore was far more successful with much less infrastructure.

50. Given that freezing technology was very new in India and the market for frozen Indian prawns in the 'sophisticated' US market also being a far cry this first step was indeed a bold one. The merchant concerned used the equipment of the West Coast Fisheries Company and also chartered a Japanese trawler for fishing.

51. It is known that there was some controversy as to whether it was the INP or the FAO who "discovered" the new resources of prawns in Kerala's waters. However the controversy was partly resolved by stating that the existance of such a resource was known earlier. Be that as it may, the important point is that in the early 1950's there was a conscious search for prawns by the Americans. International fishery bodies like the FAO followed. The INP resource surveys must also be seen as a part of this larger search. (See footnote 52 below). India is today the world's largest producer of penaeid prawns. Kerala contributes about half of the harvest.

52. The demand for prawns in the USA is largely a post-World War II phenomenon. Two factors are responsible for the increased demand for prawns:

1. The war-time shift in the population from inland areas to the coastal regions introduced more people to sea food. Consequently on their return to their homes, the demand for sea food spread to the inland markets. The discovery of large shrimp grounds off Louisana and the establishment of a more efficient transport system and a cold chain gave a boost to the marketing of marine products.
2. The members of the US armed forces in the SE Asian regions developed a taste for SE Asian cusine which is replete with crustaceans (like prawns) and cephelopods (like cuttle fish). With their return home the taste for the exotic sea foods is more engrained and consequently demand increases.

One need hardly emphasise that the post-war prosperity is also responsible for the effective demand --- shrimp was a luxury item.

Imports of shrimp into USA in the 1930's and 1940's were from China. Following the revolution this supply dried up and alternative sources had to be found. In 1950 the import of shrimp into the US was 18,000 tonnes, in 1959 it reaches 48,000 tonnes and increased to 63,600 tonnes in 1962. US local production was at an all time low of 17,000 tonnes in 1954. Mexico was a prime supplier and had locational advantages but could not cater to the full demand. Supply from India soon followed.

53. The new Standing Committee established in the summer of 1956 was a product of the growing, then open conflict between the Norwegians and the Indians — particularly the 'counterparts' in the Travancore/Kerala Fisheries administration. The initial administrative agreement envisaged that the Government of Travancore would "administer" the project in "consultation" with the Board of the Norwegian Foundation. The Government of India was to play a "supervisory" role. This arrangement proved ineffective for conflict resolution. The 10 member Standing Committee which gave a greater role to the Government of India was expected to achieve this (P: ro 1984 p.5). Our reading of the situation is that it was not the committee per se but the changed context of priorities in the fisheries sector — particularly its latent export potential perceived in the late 1950's — which made the Government of India more involved and interested in the INP's affairs and to that extent also concerned with reducing conflict.

54. One wonders if the Norwegians really seriously believed that the INP "creating" the Sales Organisation would give "power" to the fishermen to control their produce. If they did then it indicated their lack of awareness of both Norwegian history and social processes. See Vassdal 1982. If they did not, then having undertaken the task one must hold them responsible for failure. However, all the facets of the failure of the Sales Organisation are not well known but the total lack of participation of the fishermen in creating it is by far the most compelling cause for failure.

55. We take it that the thawing of the cold relationship between the Foundation and the Fisheries Department in Norway took place only after the death of H.U. Sverdrup. In 1957 G.M.Gerhardsen who was working with the FAO and was a world famous fishery expert was deputed to the Project first as fisheries leader and subsequently as Project Director. In 1958 and 1959 Trygve Aas and the Director of Fisheries in Norway Klaus Sunnana (who had serious misgivings about the INP when it was conceived) became involved with the project. Only with the coming of these persons can it be said that the fishery competence of the Norwegians outweighed that of the Indians.

56. One Norwegian Kroner = Rs.0.66 at 1959 exchange rates. The calculations were made from the statement of expenditures given in Sandven 1959.

57. We would include under this head the construction of the sea walls in Neendakara, trial fishing experiments, oceanographic research, training of fishermen and the scholarships to Indians to study in Norway.

58. See Klausen 1968. The total aid per capita was Rs.632 from which the salary and travel expenses of the Norwegians was Rs.158. This was deducted to give Rs.474.

59. Favourable oceanographic conditions are a very crucial determinent of a successful fishery. This is particularly true for the pelagic species which dominate the fish catch of Kerala.

60. The introduction of nylon for the making of nets was taken up by both the Department of Fisheries and many far sighted social service organisations. A prime example of the latter was the Trivandrum Social Service Society which imported and distributed nylon yarn from Canada.

61. Asari 1969 Table 9.

62. A census of the whole state's fisheries was conducted by the Department of Fisheries. Unlike most other surveys/censuses that followed in the subsequent years the reliability of this survey is high and hence provides a good bench mark. The figures mentioned except that of the output per worker are from that survey.

63. The average export value realisation in 1962 was Rs.4860. We have therefore assumed the price in 1961 to be over 4000. The prices at the shore were also increasing rapidly. Calculating from the value received by the sale of prawns catch on INP boats (Sandven 1959 and Asari 1969) we note the following prices per tonne of prawns:

1957: Rs.200 1959: Rs.290 1962: Rs.560 1963: Rs.600

64. This price is the aggregated shore price of all species and hence includes the price of prawns. Retail prices range from 50 to 150 percent above the shore price.

65. The price dropped the next year to Rs.5630 per tonne but always remained higher than what was offered by USA. It must however be noted that the Japanese always prefered the larger, more costly prawns whereas the Americans were happy even with the smaller varieties.

66. The artisanal fishermen of Kerala have been used to pelagic and mid-water trawling using two-boats. Prawns were caught only during the season when they become pelagic due to the upwelling — mainly the pre-monsoon months. Bottom trawling as a technique was also known to the Indian fishery scientitists and was used during experimental fishing. However, it was the Norwegians who demonstrated that it was feasible even with the small 30 and 32 foot boat which they introduced. To that extent they take the credit for making the technique accessible to a broader base of investors.

67. Pharo 1980 and 1984 talks about the 'entrepreneur' role of the INP. We are inclined to conclude that at best the INP played the "supporters" role assisting the local entrepreneurs — merchant capitalists.

68. The economic history of Kerala is largely the history of a significant merchant capitalist class. The main economic activities in the region revolved around the trade of land-based cash crops to foreign markets. Pepper, cardamom, rubber timber, tea, coffee, cashew, lemon grass, coir are examples. We have also shown how fish oil became a source of foreign exchange in the late 1800's.

69. The cashew industry which was situated around Quilon was beginning to face a crisis in the early 1960's and the rise of prawn exports came as a great relief to many capitalists who shifted over. As in all such activity there are the pioneers who take great risk and those who join only after being sure of the extent of profits.

70. The colonial rulers with their superior finances and military might supported and defended their merchant entrepreneurs from competition. This however did not prevent the natives from devising numerous ways and means of entering the trade by collaborating and competing with the foreigners.

71. The technology of freezing was available in Kerala before the IMP as is evident from its use in 1938 and subsequently in the early 1950's by the handful of private firms exporting frozen shrimpt to USA. The freezing capacity in Kerala in the 1947-56 period was 54 tonnes. The IMP built the most modern facility.

72. (Asari 1969 Table 12 & 13) The facilities of the IMP taken over by the Department of Fisheries was valued at Rs.1 million and that of the 3 firms in the private sector in Quilon at Rs.10.4 million. This was in 1968. In 1963 there was no investment yet made by the private sector --- they leased in the IMP plant for their use.

73. Pharo 1980 talks about this juncture in the IMP's history as a time when they were on the verge of 'success' but unaware of it. Infact he even says that there was some discussion about winding up the project just prior to this turning point in its history.

74. This historical inevitability is best articulated by Galtung 1969 when he says "A development pattern may be very different from what one hopes and expects, regardless of intention and capabilities.-- simply because it is inserted into structures so strong and with a dynamism of their own, that it far exceeds what a handful of good people can muster of defenses".

75. It is of great relevance here to note that one of the objections raised by Norwegian fishermen in 1930 to the introduction of trawlers (which were financially outside the reach of the working fishermen) was that it would be the first step to the growth of capitalist relations in fishing. That this happened in Kerala following the Norwegian promotion of trawlers is therefore hardly surprising. It has been mentioned that the trawlers introduced in Kerala were very small compared to what was opposed by the Norwegian fishermen in Norway in 1930. The important point is not the absolute size but the fact that in relative terms the scale of difference between the investment required for the existing level of technology and the one to be newly introduced was perhaps the same in Norway and Kerala. It is perhaps of interest to note that trawling operations have never been permitted in Norwegian in-shore waters.

76. Asari 1969: Table 10 refers to the structural change which was basically the creation of a "Non-operating entrepreneur" class -- or more bluntly a capitalist class -- in the project area. He writes: "This welcome change could be wholly attributable to the credit of the IFP as it was the only development agency functioning in the area during the period". In 1953 of the 720 fishermen households in the area none belonged to this class. In 1963 the total households increased to 731 and the new class is made up of 20 households. There were also 64 "operating entrepreneurs" of mechanised boats. By the end of 1963 as many as 138 mechanised boats were issued to fishermen. If "operating entrepreneurs" are assumed to work only one boat per head it would mean that the remaining 74 boats were operated by the 20 "non-operating entrepreneurs" of the area. Asari also points out that only 87 of the 138 boats were operated by fishermen "the rest had been disposed of for various reasons" Capitalistic ownership also laid the basis for a proletarianised labour force most of which was recruited from the southern districts of Trivandrum and Kanyakumari.

77. Asari 1969 p.7

78. The South Indian Federation of Fishermen Societies (SIFFS) -- a federation of genuine fishermen organisations with head quarters in Trivandrum -- approached the IFP with a request that they accept shark fins from the sharks caught by their member fishermen since SIFFS had a problem of marketing them. The request was declined since the rules of the IFP did not permit such assistance (Information from SIFFS personnel).

79. Fishing was, and largely continues to be a caste based occupation. Involvement in selling/processing fish was also restricted to a few communities. There was therefore very little 'free' movement of capital or capitalists into the sector prior to the 1950's. Thereafter we see a trickle of entry and soon a tide by the mid 1960's. Undoubtedly it was thephenomenal profit opprotunities which broke down the socio-cultural barriers. It was now respectable to talk about "being in the prawn business" whereas the same persons may have shunned the though of making a living out of selling dried fish. The centralisation of fish landings to two or three major harbours also made the modern sector amenable to easier (absentee) control.

80. The external pressures on India to confirm to the "rules of the game" by external funding sources brought about the devaluation and the emphasis on export-orientation. Marine products were ideal export items considering that the foreign component involved in the production and processing was practically nil. The value of exports of frozen prawn alone more than doubled from Rs.41 million to Rs.88 million between 1965 and 1966 -- the quantity increased only from 7028 tonnes to 8784 tonnes. Over 90 percent of this was from Kerala.

81. See foot note 72 above.

82. The plan expenditure figure of Third Five Year Plan and subsequent 3 Annual plans:

(in Rs. million)

	Third Plan 1961-66	Annual Plans 1966-69
1. Mechanisation of Boats	11.2	42.8
2. Harbours etc.	8.2	8.9
3. Training of fishermen	1.2	1.6
4. Export processing and marketing facilities	6.6	5.4
5. Kerala Fisheries Corporation	—	6.5
Total	27.2	65.2

The export figure calculated from MPEPC 1970 is the total value of all marine exports from Kerala.

83. The plan expenditure figure of third Five Year Plan and subsequent 3 Annual Plans:

in Rs. millions

	Third Plan 1961-66	Annual Plan 1966-69
1. Traditional craft gear improvements	1.1	1.9
2. Credit/Grants to village cooperatives	1.1	2.5
3. Internal marketing Schemes	1.5	—
Total	3.7	4.4

Quantum and Value of the catch of fish and prawns from Kurien, 1978a

84. For a critique on the fishery cooperatives of Kerala See Kurien, 1980.

85. These financiers and middlemen were those who have been traditionally involved in the fish economy. Many of them also combined the role of financier-merchants. The merchants among them were involved largely in fresh fish trade and a smaller number in the export of dried fish and prawns. Only a few of them however moved easily and naturally into the frozen prawn export trade. We therefore notice that there is also a segmentation among the merchant class as a whole. These segments are not only separated by economic and financial barriers alone also by strong social and cultural factors. The educated economics graduate, financed by a nationalised bank and promoted by a big business house wanting to enter the marine export business, would easily 'become' a merchant-exporter of frozen prawns but never of dried fish even if the margin of profits in the latter were as high. See Kurien 1978 b.

86. Aggregated from State Plan expenditures: (in Rs.million)

	Annual Plan	IV Plan	V Plan	Annual Plan	VI Plan
Investments and working funds for Kerala Fisheries Corporation	6.5	...	14.3	18.9	4.4

87. The Kerala FisheriesCorporation is probably the largest loss making public enterprise in Kerala when considered in this manner.

88. The modern sector brought with it the concept of the "worker fishermen". Getting a share of the net returns (30% divided by the crew of 5) we can consider them to be receiving a "variable wage". In the traditional sector fishermen are generally owner-workers, non-owners being considered as "partners". The workers on the mechanised boats were initially all from traditional fishing communities. Their productivity and per capita income have always been higher than their counterparts on non-mechanised craft. For details see Kurien 1978a .

89. MPEPC 1970 and MPEDA, 1978 and MPEDA, 1984.

90. The Japanese prefer the prawn headless but with the shell-on. The Americans want a fully peeled and deveined product. The former gives a higher yield from the fresh prawn weight. This factor is also partly responsible for the increased quantum of export of frozen prawns following the large scale buying of the Japanese.

91. For a detailed account of the entry of big business into the marine export trade see Kurien 1978b. They began their involvement without direct investments in any physical facilities but "promoted" entrepreneurs who were willing to become their agents. Essentially the big business house functioned like merchants. Their involvement became a source of threat to the local merchant class who opposed their entry into the trade. Consequently the Government of India was forced to curb the activities of the big business houses. By the end of the seventies most had wound up their marine fishing and export activities.

Growth of freezing capacity:

	Private Sector	Public Sector
	(Cumulative and in tonnes)	
1962-66	182	33
1967-71	386	51
1972-76	504	356

Growth of frozen storage:

1962-66	2095	805
1967-71	4641	1035
1972-76	7613	1210

After 1976 there is hardly any new capacity installed and what exists runs at 20-25 per cent utilisation.

92. The growth of mechnised boats was unchecked. There was no process of mandatory registration of boats and hence even a definite count of the number in operation could not be made.

93. The pauperisation of the artisanal fishermen over time provided a "free" work force to operate the mechanisedboats far in excess of the required number. Many boat owners could have as many as 8-10 workers "on call". This [illegible] the bargaining power of the workers and affected their security of tenure. Earnings to workers still remains as a share payment. It is perhaps the overall political environment where the working class have as powerful a "lobby" as the capitalist class which has prevented any change from the sharing system. T is in a sense is unique to Kerala's mechanised sector in fishing.

94. This is an inflated estimate since it isnot based on the larger number of workers who would have shared the total earnings. Micro level studies show the figure to be around Rs.3600 in 1980-81 prices. See Kurien and Willmann 1982.

95. That necessity is the mother of inventions is very true judging from the various gear, tackle and biat innovations made by the artisanal fishermen in the latter half of the decade of the seventies. In the Trivandrum district for example a fishermen must possess or participate in fishing with atleast 5 different gear-types if he is to fish for 300 days of the year. The ownership patterns and sharing systems pre alent allowed this to be attained without all the fishermen owning all the types of gear. With the falling production, control over a greater asset base gives a fishermen a competitive edge over a neighbour who has less.

96. Theimpact of this trend has not be fully assessed. A recent study (Kurien 1984a) covers two entres --- the IDP project area and Vizhijam fishing harbour in Trivandrum --- and studies the changes in productivity and profitability following the introduction of motorisation and new craft designs in the artisanal fisheries sector. It also attempts to highlig some of the aspects that needs to be taken into consideration if the trend continues.

97. Scientists studying tropical water fisheries point out that even at low (individual, levels of productivity an unregulated number of operators fishing the in-shore waters can endanger the stocks.

98. Sebastian Mathow, "Growth and Dynamics of the Marine Export Industry in Kerala" M.Phil. Dissertation Jawaharlal Nehru University, New Delhi (in progress).

99. The operation of the local units of MNC's were strongly resented by the new merchant capitalist class who saw their entry as a threat. The latter were able to muster enough support to get very severe restrictions placed on big business house operations. Consequently many of the business houses shifted their operations to Andhra Pradesh and Orissa where the established merchant interests were not as well entronched.

100. Very little systematic worked has been done in assessing the number of persons involved and the way in which their work conditions have evolv - during the decade. Kerala 'exports' to other states in India a large number of young girls who form a sizeable migrant labour population in the other leading marine processing centres in the country. Bombay, Veraval, Puri are places where their numbers are considerable.

101. The further away the retail market from the shore the higher the mark-up. Certain select species such as seerfish and pomfret command a premium in the urban markets. These two species are the only ones generally stocked in the frozen chests of retail food stockists.

102. Fish as the cheapest source of animal protein and in the early 1960's accounted for three-quarters of the animal protein intake of the Kerala population. We have no recent estimates of the intake but it stands to reason that both the above are now facts of history.

103. The shift to milk as a response to its greater availability and the relatively slower increase in prices has been observed. See Nair 1978. At family level the middle class parent gets a child accustomed to milk and eggs and fish is served occasionally. This is in part response to the higher prices for fish and the scarcity of good quality fish.

104. This survey was undertaken by the Department of Fisheries of Kerala State in 1979. After the survey undertaken by the Department in 1957-58 it is the only other comprehensive survey of socio-economic conditions undertaken so far.

It is a widely accepted fact by social organisers, bureaucrats and politicians that the fishermen of Kerala still belong to the most economically and socially backward section of the state's population. Yet, as has been pointed out, there are few other sections in the state whose labour contributes Rs.3 million every day to the country's forei exchange earning .

105. The income figures speak for themselves but the picture is made worse when one juxtaposes the level of indebtedness over it. See Platteau et al 1981 for a graphic and analytical account of the level of credit and indebtedness among fishermen in south Kerala including the INP area.

106. It must be pointed out that the survey indicates the quality of life of the fishermen of Quilon -- as judged from their housing standards, toilet facilities and access to water -- to be higher than that of other maritime districts of Kerala. The prime reason for this is the headstart they had in these respects due to the health and sanitation work undertaken by the INP. It is also true that the income distribution is less dispersed than the state average and relatively more households have incomes above Rs.3000. The concentration of the mechanised sector's operations in the region is the main explanatory factor.

107. The scientific community has not taken a very consistent position on this question. The biologists of the Central Marine Fisheries Research Institute however are willing to state that given the evidence available to them there is "economic over-fishing" of some resources but not "biological overfishing". The unfortunate fact is that by the time the 'evidence' is available it may be too late for the fishery.

108. The artisanal fishermen's agitation is at once both an ecology movement and a social movement. The most powerful trade union is an independent, non-political party union (a rare phenomenon in Kerala) in which are also involved many social activists -- some of whom are priests and nuns. As a consequence of this there has been a tendency particularly with the press and the politicians to discuss the ecclesiastial issues involved and side track the crucial ichthyological matters. The agitational style of the union and the massive turnouts to demonstrations have forced both left and right governments in the course of the last 3 years to concede in principle to the need to protect the rights of the artisanal fishermen. For more details see Kurien 1984b also Kurien and Mathew 1982.

109. By posing the questions about the operation of trawlers, the artisanal fishermen not only alienate the capitalist owners but also the workers on the mechanised boats who from the point of a class analysis are actually their allies. The inability to "fight trawlers" without "fighting the fishermen workers on board" has been a source of constant contradiction for the artisanal fishermen. This is particularly crucial when they opt for a physical confrontation at sea. The capitalist owners of the trawlers use this contradiction to their advantage.

110. This is not only in Kerala but also among the fishermen in other states. See letters to Mrs.R Brusletten, Royal Ministry of Department, Norway from the Secretary of the Coonchoa Ramponkaruncho Ekvett in Goa on the subject "Norad Fisheries Programme in India not in the Interest of Fishermen".

111. Taking the average production of the two sectors for the period 1971-76 and considering their pattern of production we have calculated the following (Kurien 1978a)

	Mechanised Sector	Non-mechanised sector
1. Contribution to protein consumption of consumers in the State (in gms/ capita/day)	1.16	7.02
2. Employment generated in the forward linkage of activities (in millions of person-days)	4.33	16.30

As regards the spatial distribution of the activity, the mechanised sector is concentrated to 10 all-season centres along the 590 kilometre coastline, the non-mechanised sector has a landing centre every 2½ kilometre of coastline. The concern for a dispersed, settlement and production pattern in fisheries is as much an issue in Kerala as it is in Norway. See Hannesson 1982.

112. Social profitability can include a source mentioned in footnote 111 above and also such measures as value added per unit of investment and catch per unit of energy consumed. On all these counts the artisanal sector is more socially desirable.

113. For a more detailed discussion of this see Kurien 1984d.

114. With the fishermen population increasing at a rate of 2.3 percent per annum compared to the state average of 1.9 percent the possibility of finding employment for all within the fisheries sector is rather bleak. Even today we have a situation of too many fishermen chasing too few fish.

115. The best example of maintaining the balance was the promulgation of a Marine Regulation Act to appease the artisanal fishermen and consequently to be rather lax in implementing it thus allowing the status quo to be maintained.

116. Between 1981 and 1984 two high powered commissions were constituted to look into the scientific and social dimensions of the fishermen's demands and recommend to the government the guidelines for policy making. The Babu Paul Commission, constituted after the fishermen's agitation in 1981, submitted its report with five out of six fishermen representatives submitting a long dissent note. (the representative of the ruling Cong (I) fishermen's union sided with the majority). This commission had 13 members (including the Chairman) of whom 7 were officials and scientists. Two of them never attended any of the meetings. On the day of submission of the final report one sent a letter endorsing the commission's views; the other was brought from his office to sign it thus avoiding what may have turned out to be an embarassing situation for the government. The Kalwar Commission appointed after the 1984 agitation had not submitted its report at the time of writing (April 1985).

117. The Purse-seine Fishing Boat Owner's Association moved the Kerala High Court on the grounds that the exclusion of purse-seiners from some areas of the sea tantamount to a violation of the owners fundamental rights to a livelihood guaranteed under the Constitution of India. The court awarded a verdict favourable to them on some "technical grounds" relating to the manner in which the Government's notification of the exclusion was made.

118. To the older generation of Norwegians the INF or the "Kerala Project" is very much a part of their mental matrix considerin the tremendous public involvement in the 1950's for collecting funds for the project as well as reading, seeing and reacting to its progress. The discussions and writings on the Norwegian role in Kerala, by Norwegians, therefore tends to have more than a tinge of emotion associated with it whether the evaluation is positive or negative. Galtung 1984 is a good example.

119. The FAO was very much involved in the fisheries sector of India in the decade of the fifties. Their involvement in Kerala was at a lower key precisely because the Norwegians were around. However the approach of the FAO was distinctly different. They believed in testing out several prototyes and would leave the commercial applicability to others. Long concentrated involvement in one area as with the Norwegians would hardly be the style of the FAO. The first exporter of prawns from Kerala used a Japanese manufactured trawler of much larger size than those popularised subsequently by the Norwegians.

120. A seminar organised by the Norwegian Ministry for Development Cooperation in March 1985 to discuss the Norwegian aided fishery development projects in India, Tanzania and Kenya was evidence of a rare show of openness to criticism and a willingness to learn lessons from mistakes. This is particularly so in the context of increasing sentiments against aid to developing countries both by the extreme right and left political formations in Norway.

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