CHAPTER 5

LABOUR PROCESS CHANGES:
CONFLICTING TERRAINS AND LABOUR CLASS RESPONSES

The labour process changes in the fishery sector of Kerala covered by chapter four was the story of the success of the capitalist in obliterating the organically evolved labour process in the traditional sector with alien technology. Capitalist intrusion served to toss coastal Kerala into the vortex of conflicts, in another epoch of the theory of labour process - the contested terrain. This chapter focuses on such conflicting terrain.

Marginalisation of Fishermen Community and Fish Workers

The saga of modernisation of marine sector in Kerala is also one of marginalisation and peripheralisation of the artisanal fishing community. Until the modernisation attempt, the capture fisheries was exclusively the preserve of the fishing communities. There was no external threat to their economic domain, but their was nothing to write home about their economic status. Governmental efforts to improve their lot stressed the need to raise their productivity. The early attempts of the Government were premised on a realistic approach of leaving fisheries as a source of occupation and livelihood of a considerable section of the population of the state for a long time (Kurien and Achari, 1988).

Based on these facts, a two fold approach was resorted to: first to upgrade the existing traditional technologies and then gradually introduce new ones. By the formal strategy efforts were made to supply wood for traditional boats,
cotton for nets and the setting up of curing yards for hygienic processing. Introduction of nylon nets, issuing the fishermen with small mechanised gill-net boats and establishment of more ice plants were the chief components of the latter strategy. Some institutional arrangements like co-operatives were also made to disseminate the new technology to reach the real producers. The skill and accumulated knowledge of the fishermen were considered crucial in imparting complex skills unique to the modern technology.

However, a continuum of this realistic approach was considered as irrational and consequently neglected when viewed against the ‘new paradigms of developments’ based generally on the imitation of western models. Rapid modernisation with big strides in technology vertically imposing upon the existing structure was found to be the key approach under the new development paradigm. The export possibilities added verve to this approach. Thus we see in Kerala fisheries two phases of modernisation: first a slow phase and then a rapid phase (Kurien and Achari, 1988). The transition from a slower phase to a rapid one has resulted in economic progress in fisheries of Kerala, but has rendered the artisanal fishermen a sapless load in the following ways.

1. By rendering their means of production less productive and non-viable in the context of the ‘new progress’ that was unfolded in the fishing sector.  
2. By forestalling the artisanal group from receiving due share in the organised development attempts of the Government.
The figures that follow shed light upon the progressive marginalisation of the artisanal fishermen during the modernisation phase. We may first look into the trends in fish production.

Table 5.1: Trends in Marine Fish Production in Kerala State (1956-1980)

<table>
<thead>
<tr>
<th>Phases</th>
<th>Periodisation</th>
<th>Total fish harvest (000 tonnes) (Average for period)</th>
<th>Harvest by technology (000 tonnes)</th>
<th>Non-mechanised</th>
<th>Mechanised</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slow modernisation Phase</td>
<td>1956-59</td>
<td>237</td>
<td>237(100)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1960-66</td>
<td>288</td>
<td>276(96)</td>
<td>12(4)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Use of nylon nets and gillnet boats)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rapid modernisation Phase</td>
<td>1967-75</td>
<td>380</td>
<td>319(84)</td>
<td>61(16)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Use of trawlers and trawl nets)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1976-1980</td>
<td>332</td>
<td>230(69)</td>
<td>102(31)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Use of more trawlers and purse-seiners)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Kurien and Achari, (1988)
(Figures in brackets show percentage)

It is clear from table 5.1 that over the period of twenty years (1956-1975) the catch has increased. But the fruits of production enhancement were not shared uniformly. In other words the traditional fishermen were not the beneficiaries from such a growth. During the slow modernisation phase, because of the realism in the government policies, in the first decade from 1956-1966, the benefits of growth were confined among the real producers. During the 1956-59 period, 100 per cent of the total catch was contributed by the artisanal fishermen. When nylon nets and small gill net boats were experimented by the artisanal fishermen, the production has increased and the artisanal fishermen were the sole
beneficiaries of such growth. However, that only a small number of fishermen were successful in becoming owners of the mechanised means of production with the aid of government schemes and their contribution to the total catch was just four per cent during this period. Even though, slow in pace, the new set of conditions with appropriate technological changes contributed to a measurable increase in productivity of the active fishermen. The fish catch per fisherman per annum rose to 3,800 kg in 1965 from a 3500 kg in 1961. The per capita income of the fishermen on an annual basis also rose from Rs.330 in 1961 to Rs.540 in 1965 (Kurien and Achari, 1988).

However, the new shifts in policy approach did not give ample time to mature and dissipate the above set of conditions in the entire artisanal fishery. On the other hand, it boosted the commercial interests resulting in penetration of capitalist interest particularly among the outside capitalists who were remotely connected with capture fisheries. The rapid modernisation phase with the use of bottom trawling technology enhanced production tremendously during the period 1967-75. The average production during this period has increased to 380000 tonnes, an increase of about 32 per cent when compared with the previous slow modernisation phase. Of this increase, more than 53 per cent of the growth was the share of the mechanised sector, whereas the non-mechanised sector contributed only 47 per cent. In terms of the growth per annum, during the phase of rapid modernisation the growth rate was more than 45 per cent in the mechanised sector and about five per cent in the non-mechanised sector. The mechanised sector, growth was spectacular but in the non-mechanised sector the
growth rate of the previous slow modernisation phase dropped from 2.7 to 1.7 per cent per annum.

The second phase of the rapid modernisation too intensified the marginalisation and peripheralisation of the artisanal fishermen. Despite the introduction of new trawlers and purse-seiners, the fish production as a whole has declined. The overall fish landings, on an average, has declined to 332,000 tonnes from 380,000 from the previous period, (a decline of about 13 per cent). It may be noted that this decrease in the level of output has not affected the mechanised sector. In fact, their fish landings have increased from 61,000 tonnes to 102,000 tonnes (an increase of more than 67 per cent). The decline in the total fish landings was on account of the fall in catches of the artisanal group. In fact, their production fell to 230,000 tonnes, from the previous high of 319,000 tonnes. The waxing of the mechanised sector and the waning of the traditional sector is well exposed in the last columns. In terms of annual growth rate, while the mechanised sector has grown by more than 13 per cent, the artisanal sector registered a decline in production by 5.6 per cent.

In the backdrop of an annual growth rate of fishermen population of roughly two per cent, modernisation of the fishing sector has worsened the economic conditions of the artisanal fishermen, with a growth rate of production of 1.7 per cent in the first phase of modernisation and a negative growth of 5.6 per cent in the second phase.

The artisanal fishermen advance specific reason for decline in their catch. Generally, the mechanisation drive has resulted in ecological damages the onus of
it is greater upon the traditional fishermen. Indiscriminate trawling and consequent obstruction of fish breeding systems have upset the eco system causing drastic fall in fish population which accounts for drastic reduction of the average catch, size and earnings of fishermen.

The traditional fishermen argue that their catch has been declined due to three specific reasons.

1. The raking of the sea by the bottom trawlers results in damage of fish eggs and larvae and disturb nursery ground of fish. The artifacts like trawl nets scoop up a lot of juvenile fish.

2. The noise of the mechanised boats frighten off fish and the operation of the boats particularly during night times results in damaging the nets of the artisanal fishermen by the propellers of the mechanised boats.

3. Trawling operations cause turbidity of the sea and fish shoals avoid the muddy sea and escape their gears (Kurien and Mathew, 1982)

The competition at two levels in the production sphere also adversely affected the traditional fishermen. First is the competition for space. Trawlers are in pursuit of demersel species while non-mechanised crafts with their drift nets primarily intend to catch larger migratory pelagic fishes. While they fish in the same area, they are infact competing for space and generally the latter always incur huge loss of capital.
Similarly, while in the mechanised sector resorts to chasing the fish shoals and encircling them enmasse, the traditional fishing wait for shoals to enter into their ambit of operation. These two techniques known as active and passive fishing contest each other in the same area, the latter would be at a disadvantage resulting in lower catch and income (Kurien and Mathew, 1982).

The experiences of ecological damages and the consequent decline in catch is well known to the fishermen ‘with their intimate familiarity with the sea’. It is also corroborated by scientific community even though the issues involved have not been conclusively settled.

| The fishermen sauvy of the sea and fish acquired through their constant | familiarities with the sea makes the damages to the eco-system and consequent decline in fish population so close to their heart. A U.N. study clearly establishes a relation between noise generated by the fishing vessels and fright reactions of fishes. The study shows that fishes had a violent escape behaviour by diving and avoidance of the disturbed area by oriented changes in swimming direction (FAO, 1979). Similarly, it has been well established in fisheries biology that inshore waters form the nursery grounds of all kinds of fish. Gulland has pointed out “it is an unfortunate biological fact that the nursery grounds tend, when they exist, to be comparatively close inshore” (Gulland, 1979) The reason given is that the lower salinity level in the inshore region provide some security to the little fishes as their predators cannot withstand the lower salinity condition. Given this biological fact, there is evidence to the fact raised by the artisanal fishermen that trawlers adversely affect the breeding grounds. |
The marginalisation of the artisanal fishermen were not confined to attempts at eradicating them from the sea and depriving them of fish but also by diverting the public funds away from projects which would benefit the children of the sea. An examination of the plan expenditure incurred for the development of marine fisheries during the slow modernisation and rapid modernisation phase reveals that the artisanal fishermen were not the principal focus in the development schemes initiated in the fisheries sector during this period. The plan expenditure incurred in the Kerala Fisheries during 1956-1980 is shown in Table 5.2.

**Table 5.2: Kerala Marine Fisheries - Plan Expenditure (1956-1980)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Upgrading traditional craft</td>
<td>2 (5)</td>
<td>6 (2)</td>
</tr>
<tr>
<td>2.</td>
<td>Introducing new craft</td>
<td>11 (27)</td>
<td>102 (36)</td>
</tr>
<tr>
<td>3.</td>
<td>Fishery infrastructure</td>
<td>8 (19)</td>
<td>27 (9)</td>
</tr>
<tr>
<td>4.</td>
<td>Processing and marketing infrastructure</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oriented to internal market</td>
<td>3 (6)</td>
<td>2 (1)</td>
</tr>
<tr>
<td></td>
<td>Oriented to export markets</td>
<td>8 (21)</td>
<td>9 (3)</td>
</tr>
<tr>
<td></td>
<td>For fisheries development</td>
<td>-</td>
<td>46 (16)</td>
</tr>
<tr>
<td></td>
<td>corporation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Credit for fisheries co-operatives</td>
<td>2 (5)</td>
<td>19 (7)</td>
</tr>
<tr>
<td>6.</td>
<td>Training schemes for fishermen</td>
<td>1 (3)</td>
<td>6 (2)</td>
</tr>
<tr>
<td>7.</td>
<td>Welfare measures, social infrastructure</td>
<td>1 (3)</td>
<td>60 (20)</td>
</tr>
<tr>
<td>8.</td>
<td>Administration</td>
<td>2 (5)</td>
<td>5 (2)</td>
</tr>
<tr>
<td>9.</td>
<td>Other items</td>
<td>3 (6)</td>
<td>6 (2)</td>
</tr>
<tr>
<td></td>
<td>Total expenditure</td>
<td>41</td>
<td>288</td>
</tr>
</tbody>
</table>

*Source: Kurien and Achari, (1988)*

*Figures in brackets are percentages.*
Even though during the rapid modernisation phase the total expenditure has increased from Rs. 41 million to Rs. 288 million (a little more than 602 per cent increase) the allocation made towards the direct improvement of the artisanal fishermen has shown any reasonable increase. In fact allocations that would have improved the conditions of the artisanal fishermen has declined during the second phase of modernisation. For example, five percent of the allocation had been given for upgrading traditional craft during the slow modernisation phase. It declined to two per cent in the second phase affecting directly the artisanal fishermen. Similarly, a one per cent cut from the training schemes of fishermen during the slow modernisation phase affected the traditional fishermen adversely. Of course, there is an increase of two per cent in the credit given to fisheries cooperatives but it is already an established fact that the benefits of increasing credit have been usurped by the well-off fish merchants rather than the artisanal fishermen (Hakkim, 1980). A cut in the allocation earmarked for processing and marketing infrastructure particularly in the development of internal markets directly affects the artisanal group. An increase of 17 per cent is seen to have occurred during the rapid modernisation phase in the case of allocation to welfare measures and social infrastructure. But there is no proof to show that such an increase has led to an enhancement of the productive ability of the artisanal group. The only reality is that they were cornered by the 'new modernisation schemes'.

The allocation of funds by the private sector also favoured the capitalist class owing to their credit worthiness and solvency. The artisanal fishermen are shown the door by private and public organised credit agencies. Naturally they are thrown off to the mercy of the money lenders giving the mushrooming exploitative practices (Platteau, et al., 1985).
The pathetic existence of the traditional fishermen was put out by the socio-economic census conducted by Department of Fisheries in 1979. The fishermen were low in income and educational attainments, housing conditions were poor with 48 per cent having only dilapidated huts, access to drinking water was limited, sanitary and lighting facilities were abysmally low. This squalor, poverty and deprivation and uncertainty about future provided a breeding ground for dissent and protest. The restiveness of the fishermen caused by their marginalisation and peripheralisation engendered by the avarice of the capitalist began to crystallise. Similar to the fundamental opposition of the working class against the capitalists, sharp responses emerged from the real fishermen but in novel ways due to the specific relations in which the marginalised group have put themselves in and also against the capitalist class in LDCs. We may now delve into the ‘constructive responses’ initiated by the fishermen against their plunder and exploitation by the capitalist intruders.

The responses evolved from the fishermen community were mainly in two directions.

1. Strengthening their bargaining power as a class against all the forces which were instrumental in marginalising and peripheralising them, through collective actions.

2. Collective and individual attempts to improve their means of production by incorporating viable alternative techniques. We may first focus on the former.

The fishermen of Kerala were not cohesive as the name suggested. There were no general platform to bring them together for a long time. Moreover, the fishermen belonged to Hindu, Christian and Muslim religious groups and were...
subject to their religious dogmas and restrictions and thus remaining isolated groups. They were unable to cut across such religious divisions to understand and identify the common economic interests. However, there were some organisational attempts to unite the respective groups on religious sans explicit economic motives behind. Two such associations were Dheevara Sabha and Latin Catholic Associations. Their main concerns were social and familial issues of the respective communities (Ibrahim, 1986).

However since independence political parties made certain attempts to organise fishermen on account of vote bank considerations. Both the congress and communist parties vied to each other in this pursuit. The congress party focused on the anti-communist feelings of the fishermen enclaves who were traditionally grouped on religious lines (Ibrahim, 1989). The communist party, on the other hand intruded into all possible areas of fishermen enclaves impressing them of the need for collective action in safeguarding the rights of the fishermen in the wake of modernisation process. Attempts at organising fishermen during 50s and 60s taught that they would not come around in a common platform of fishermen needs (Ibrahim, 1986); for the fishermen remained complacent.

Initially, the traditional fishermen were the focus of modernisation and the thrust was on progressively equipping them with the modern means of production. However, all such objectives which aimed to keep the traditional fishermen in the central place of modernisation failed. The modernisation which assumed capitalist line of growth progressively marginalised the traditional fishermen and deprived them their only means of production. This fact induced the fishermen of all the caste and religion to come together to recover and preserve the fishing ground lest to be wiped out.
However, the pattern of collectivisation and unionisation of fishermen were region and situation specific. In the mid-seventies Christian clergies who had abiding interest in their cause started conscientizing fishermen of their plight in the wake of mechanisation. This created them a new awareness, a sense of seriousness and immediacy, which induced them to organise themselves in trade unions to find ways and means to avert a disaster. This resulted in the formation of small fishermen unions in various coastal districts of the state. Table 5.3 shows the progressive efforts of fisherfolk to organise themselves into unions.

Table 5.3 : Formation of Fishermen Unions in Coastal Kerala During 1970s and 1980s

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Name of the union</th>
<th>Formative year</th>
<th>Place</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Alappuzha district fish workers union</td>
<td>1970</td>
<td>Alappuzha</td>
</tr>
<tr>
<td>2</td>
<td>Marine fish workers union</td>
<td>1970</td>
<td>Kochi</td>
</tr>
<tr>
<td>3</td>
<td>Alappuzha catholic fish workers union</td>
<td>1970</td>
<td>Alappuzha</td>
</tr>
<tr>
<td>4</td>
<td>Vijayapuram parish fish workers union</td>
<td>1977</td>
<td>Vijayapuram</td>
</tr>
<tr>
<td>5</td>
<td>Thiruvananthapuram parish fish workers union</td>
<td>1978</td>
<td>Thiruvananthapuram</td>
</tr>
<tr>
<td>6</td>
<td>Anchuthengu boat workers union</td>
<td>1978</td>
<td>Anchuthengu</td>
</tr>
<tr>
<td>7</td>
<td>Thiruvananthapuram district fish workers union</td>
<td>1979</td>
<td>Thiruvananthapuram</td>
</tr>
<tr>
<td>8</td>
<td>Cochin area fish workers union</td>
<td>1979</td>
<td>Kochi</td>
</tr>
<tr>
<td>9</td>
<td>Malabar independent fish workers union</td>
<td>1982</td>
<td>—</td>
</tr>
<tr>
<td>10</td>
<td>Ernakulam district fishworkers union</td>
<td>1982</td>
<td>Ernakulam</td>
</tr>
</tbody>
</table>


The ambit and the issues of these unions remained local. When the unions were initially formed there could not be any articulative direction in regard to...
resolving the fishery crisis since they could not grasp the dialectics of the
capitalist growth that got entrenched in the fishery with modernisation attempts.
Hence they got themselves involved in seeking immediate and short run relief like
charities and favours from the government and other agencies in the form of free
ration, demand for sea wall construction, settlement of displaced fishermen etc.

The growing awareness of the root cause of their problem and
the experience of success of their collective efforts at various levels helped them to
form a state level union known as Latin Catholic Fish Workers Union in 1978.
Shedding its religious and geographical overtones, it grew up as Kerala
Swathanthra Matsya Thozhilali Union (Kerala Independent Fish Workers
Union) in 1980.

"The Kerala Swathantra Malsya Thozhilali Federation is a federation of
different district level trade unions of small scale, fishermen belonging to all caste
and creed. It is the most secular form of organisation, where Muslims, Hindus,
Christians, Priests and Nuns collaborate and struggle together for the betterment
of the traditional fisherfolk" (Kochery, 1982).

All the living struggles of the fisherfolk were conducted under the banner
of this union since then.

With the formation of a state wide union the fishermen struggle
underwent a qualitative change. Strategically, they adopted increasingly of
intervening and proactive tactics. The union focused its activities on two lines. At
one level, it tried to give a scientific temper for the traditional knowledge base by
organising awareness programmes. The services of voluntary organisations and
individuals who were sympathetic to the cause of traditional fishermen were also made use of. At another level, it focused on increasing the socio-economic awareness particularly in the context of the dialectics of capitalism.

The height of their increasing consciousness and the optimism in their collective efforts prompted them to float 'The National Forum for Catamaran and Country Boat Fishermen's Rights and Marine Wealth' for more rigorous struggles.

Thus we see that the traditional fishermen who were a disorganised lot for a long time got organised in the decade of 70s and early 80s as a strong force determined to challenge the capitalist intrusion in their domain — their only source of livelihood. So far, we have described the political response of the traditional fishermen and now we may focus on the technological response which is considered to be a peculiarity of traditional workers in the socio-economic context of LDCs.

**Technological Responses Catering Artefactual Improvements:**

The artisanal fishermen developed their artefacts overtime in an informal set up. However, in the face of capitalist development such 'gradual approach' of technical improvements became insignificant (Kurien, 1994). Under capitalist production system commercial interest is the prime determinant of technical changes vis-a-vis the subsistence and sustainable motives of technical improvements under traditional sector. Thus the dynamics of technical developments occur at two different levels affecting people differently. In this sense, technical changes have certain class dimensions. The agencies associated in
the development of technology and the motives attached in such developments further prove this dimension. Certain altruistic Non-Government Organisations and individuals had the foreboding of possible marginalisation of the traditional fishermen because of capitalist intrusion and they felt the necessity of defending such marginalisation by increasing the productive ability of the artisanal group. Development and incorporation of a new technical packages involving plywood boats (PBs) and out board motors (OBMs) were certain crucial steps. The principal agencies associated with the development of a viable technology in the traditional sector were the Kottar Social Service Society (KSSS), a social organisation working among fishermen in Kanyakumari District of Tamil Nadu, Fishermen Community Development Programme (FCDP), working among the artisanal fishermen in Quilon District in Kerala. South Indian Federation of Fishermen Societies (SIFFS) an apex federation of fishermen’s organisations and a host of individual fishermen. They were also helped by the Intermediate Technology Group - (ITDG) the appropriate technology centre set up by the famous economist Schumacher (Kurien, 1994).

Making New Crafts

In 1972, Fr.T.James, Director of KSSS began a search for boats affordable to fishermen. His idea of making a fibre reinforced plastic boats (FRP boats) resulted in inviting a Belgian electro-mechanical engineer, Pierre Gillet. After his arrival in 1973, KSSS started a training programme in FRP (Fibre Reinforced Plastic) moulding in its new Boat Building Training Centre at Muttom. However, some of the models developed were uneconomic when considered against the economic condition of the fishermen. Focus was given for construction of boats
affordable to fishermen and Gillet formed a Centre for Appropriate Technology (CAT) and geared to finding technological solution to a nascent need of the artisanal fishermen of the region. In the endeavour CAT got the assistance of Gifford of Intermediate Technology Development Group (ITDG). By the end of 1981, a prototype was made and successful trials were conducted and the model came to be known as ‘Muttom Cat’. Renewed versions of the model suited to the ecological and economic conditions of fishermen were developed and this was popularised as the ‘Kottarkat’. The most striking feature was that the cost of the boats were well within the reach of the fishermen.

In 1982, the FCDP at Kollam District wanted to replace their traditional dugout canoes. Their initiative and contact with CAT and Gifford helped them in the development of ‘Lakshmi Vallams’ or plywood valloms. Thus we see that certain NGOs and individuals along with the efforts of fishermen provided them a technical edge to compete the mechanised capitalist sector by developing efficient and cost effective crafts.

Fixing Outboard Motors

Adoption of outboard motors turned out to be another technical leap forward. It may be noted that motorisation of country crafts was ruled out as technically impossible by INP and adopted ‘foreign models’ suited to coastal conditions in the state. This aspect has not distracted the artisanal fishermen and their allies in their search for finding alternatives against mechanisation. In 1969, the KSS tried to motorise 100 catamarams by importing powerful 18 H.P. Evinrude petrol /kerosene engines imported from Belgium, However, the project was wound up in 1973 and it has been pointed out that “The failure of the
experiment cannot be attributed to any single factor but to a chain of adverse circumstances”. Further, it was pointed out that “technical dependence on foreign skill and equipment was certainly a major handicap” (Gillet, 1979). In 1974, the Marianad Malsya Ulpadaka Co-operative Society in Thiruvananthapuram District tried to introduce OBMs but failed. It was followed by another experiment in Purakkad, with the help of Kerala Fishermen’s Welfare Corporation established in late 1980 by Government of Kerala. Another group of fishermen in Ernakulam District successfully conducted transformation of their crafts to fix OBMs (Alagarajan, 1994). In short, the increasing marginalisation and peripheralisation forced many individual fishermen to remodel their crafts and adapt OBMs to venture into sea as a life and death matter.

**Fish Attracting Lanterns (FAL)**

Another, survival strategy introduced by the marginalised fishermen in the form of a technical improvement was the use of FAL. Of course, this practice is not a new method in fishing but in marine fisheries in Kerala it is a novel feature. The use of lanterns as a method to attract fish has been in existence in many countries like Japan, China, France, Russia, Philippines, Korea and Thailand etc (Rajan, 1995). In Kerala lanterns began to be used as part of a technical package in the fishing process in 1985. The FALs are used during night time fishing by fishermen using hook-and-lines and boat seine methods. Improvements within this technique have occurred since then. To begin with kerosene lanterns were used but were replaced by petromax lights in 1987 and the use of gas could not succeed in the operation. The popularity of this method could be gauged from the pace of its spread among fishermen. The fishermen of Marianadu in Thiruvananthapuram district used it for the first time and it spread to 27 out of
the 47 coastal villages of the district (Rajan, 1995). The number of lanterns used in each fishing unit was four or five at the beginning, which has increased to six or seven presently.

Peoples Artificial Reefs (PARs)

Marine resources are 'common property' resources and hence are 'open access' resources. Generally they are open to use by all and owned by none. However, the accessibility to fish harvesting was restricted by the skills required to appropriate from the common base. The community of fishermen have over generations acquired and transmitted such skills through learning-by-doing, and transmitted such knowledge to subsequent generations. Alien capitalist technology and techniques enabled non fishermen capitalists to rip through the community skills and plunder the resource base for profit. The wanton destruction of the resource base was inconsequential to the capitalists. The 'common property' of marine resources being the only source of livelihood for the fishermen community over centuries, the destruction of the same could not be viewed with apathy. Rather, determined, though sporadic, measures to restore and rejuvenate this common property resources camp up. Along with these micro measures certain macro measures were also evolved to regulate and safeguard the resource base (Kurien, 1990). First we may deal with the micro measures adopted by the fishermen to restore and rejuvenate their resource base. The fishermen at village level assembled to rejuvenate their fishing field through construction of artificial reefs. New reefs were developed primarily as a result of the initiative of the hook and line fishermen who were convinced that they had to help Kadalamma (Mother Sea) to rejuvenate herself after the onslaught of trawlers.
"Coastal fishermen live at a particular spot on the coast for generations and thus have thoroughly mastered the topography of the inshore waters, the profile of the sea current and other hydrological fluctuations and the related fisheries so that they constitute an ‘eco-society’ that has ecologically turned itself to the coastal eco-system that they have been living in. They have learned to live in perfect harmony with their coastal environment to conserve their natural resources and even to manage them so judiciously as to be reckoned as the self appointed custodians of their coastal eco-system" (Raj, 1990).

It is this life-oriented view that induced the fishermen community in the context of capitalistic led marginalisation to unite at various micro levels to form a socio-ecological movement at macro scale.

It is the experience of the traditional fishermen that external objects in the sea attract fish. This prompted them to place artificial reefs to attract fish, provide or improve fish or shellfish habitat and increase fish biomass locally. However, attempts to augment fish by increasing artificial reefs remained very limited owing to the relative abundance of fish in the early phase of modernisation. However, it was the marginalisation of the traditional fishermen that led to the resurgence of interest in artificial reefs. The reefs so fabricated came to be known as ‘People’s Artificial Reefs’ (PARs) as many as 22 villages, took part in the collective action of erecting PARs in the coastal waters of their villages (Kurien, 1990). During the first decade of the fishermen movement (1979-89) the pace at which PARs were erected increased substantially. The table 5.4 shows the artificial reefs erected during the period between 1960-89.
Table 5.4: Pace of Construction of PARs in The Post-Motorisation Phase

<table>
<thead>
<tr>
<th>Period</th>
<th>Before 1960</th>
<th>1979-83</th>
<th>88-89</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of PARs erected</td>
<td>2</td>
<td>9</td>
<td>21</td>
</tr>
</tbody>
</table>

Source: Kurien, (1990)

The table 5.4 shows clearly that since 1975, the period of marginalisation, the number of PARs have increased rapidly. Thus we see that the traditional fishermen responded against the capitalist intrusion and the subsequent marginalisation and deprivation not only in the form of organising unions and asserting their rights but more constructively by improving their means of production incorporating appropriate technology through developing it and in certain cases adapting it. This is a novel reaction of the marginalised community to fight against the capitalist intrusion and derangement of their domain of livelihood.

The above narrated responses of the traditional fishermen by adopting technological changes and organising themselves into unions, ushered in a specific phase since 1980 and came to be known as ‘motorisation phase’. We consider the motorisation phase in fisheries development in Kerala as an attempt of the traditional fishermen to recover control of fisheries sector from where they were squeezed out for more than two decades in the 60s and 70s.
1. The specific ways through which the means of production and efforts of the traditional fishermen were rendered nonviable in context of capitalist development is explained in chapter four.

2. A review of plan progress in 1993 reveals that out of the total plan expenditure on fisheries of Rs.39 crores, since the introduction of mechanisation upto the end of Fifth Five Year Plan, 79 per cent had gone to the development of mechanised fishing (Government of Kerala, 1993).

3. The institutional arrangement to equip the fishermen with the modern means of production was co-operativisation but it failed because such co-operatives were hijacked by vested capitalist interests (See Hakkim, 1980).

4. In Trivandrum district, at Anjengo, the formation of Boat Workers Union in 1977, enabled them to force the government to stop the revenue recovery proceedings against the fishermen who happened to be the recipients of supply of mechanised boats which were technically defective and operationally inefficient causing huge losses to the fishermen. In Kollam and Alappuzha districts also they succeeded in conceding many of their demands by the authorities.

5. The details of various strikes strategies and programmes organised by the fisherfolk through their collective efforts is described in 'Oru Samararakatha' (A Story of Struggle) by Jose. J, Kaleeckal and others (Jose Kaleeckal, et.al, 1988).
6. This fishermen’s Forum was formed in July 1978 at Delhi where 13 associations representing traditional fishermen from different parts of the country assembled.

7. At 1982 prices, the cost of a boat was Rs.7500 only.

8. The attempts of KSSS to motorise the traditional crafts in 1968 was started with the help of Indo-Belgian Fisheries Project (IBFP) and Freedom from Hunger Campaign (FFHC) Delhi and other donor agencies. Their activities were mainly confined in three areas.
   i. Introduction of nylon nets,
   ii. Mechanicalisation of catamarans, and
   iii. Tests on beach-landing crafts (Gillet, 1979).

9. Even though this attempt has failed in securing its objectives, it has indicated the scope of an organic and a linear growth in the fishery (See for details of the project KSSS, 1971). However it has not materialised because of the overemphasis with modernisation attempts.

10. For details of this experiment of fixing OBM in canoes see Kurien (Kurien, 1994).

11. Gas light are started using in 1991 onwards. Attempts were also made by fishermen of Marianad to use battery powered tube lights (PCO, 1995).

12. It later spread to all the 47 coastal villages of Thiruvananathapuram. About 1686 (82 per cent) of plywood boats are using FALs at present (PCO, 1995).
13. It has been pointed out that traditional fishermen operating shore seine used to dump rocks fastened with coconut fronds into sea bottom to attract fish closer to the shore. Fish which got aggregated over the bottom structures were caught by shore seine. This practice was based on their knowledge that fish tend to congregate over bottom structures (Fernandez, 1994).

14. People's Artificial Reefs (PARs) while showing the participation of fishermen, now develop into an important conservation measure of the marine ecosystem popularly known as artificial fish habitats. For understanding the formation, evolution and impact of these artificial fish habitats in the Kerala coast see (Fernandez, 1994).
References


The capitalist intervention in the fishery sector, the introduction of technological changes and the inevitable depredation of the real producers engendered certain unusual changes in the Kerala fishery. The change is the clout amassed by the marginalised category of producers to intervene in the production process and recapture the control of the labour process. The conflicting interest procreated another phase in the Kerala fishery, popularly known as Motorisation phase. We try to argue in this chapter that the motorisation phase has set in motion certain favourable trends of benefit to artisanal fishermen. The fishermen took up that motorisation would strengthen their productive capacity vis-a-vis the mechanised sector. The pace of motorisation given in table 6.1 is indicative of this rising expectation.

Table 6.1: Progress of Motorisation Process During 1980s.

<table>
<thead>
<tr>
<th>Year</th>
<th>Motorised crafts (Number)</th>
<th>Percentage increase</th>
<th>Cumulative percentage increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>1981</td>
<td>Marginal</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1982</td>
<td>Marginal</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1983</td>
<td>2,200</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1984</td>
<td>3,965</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>1985</td>
<td>6,574</td>
<td>66</td>
<td>146</td>
</tr>
<tr>
<td>1987</td>
<td>9,600</td>
<td>46</td>
<td>192</td>
</tr>
</tbody>
</table>

*Source: Acharya, (1989)*

By the close of 1980s only less than five per cent of the artisanal fishermen left behind in the non-mechanised category. In this chapter, we are out to probe...