CHAPTER - FIVE

PROBLEMS OF FISHING OCCUPATION
CHAPTER-V

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India has a large coastline of 8,118 KM that is occupied by diverse groups of fishing and non-fishing communities. The people speak different languages, follow different religious faiths and have a very complex caste system. More than 3 million fishers spread over 3,638 fishing villages derive their livelihoods from capture fisheries which are spread over the 2 million square KM of Exclusive Economic Zone of India.

Kerala was formed in 1956 from the former princely states of Travancore and Cochin, the Madras district of Malabar and the South Kanara taluk of Kasaragod. The combination of these regions produced a state in which the artisanal marine fishers are Hindu and Muslim in the northern and central coastal villages and Latin Catholic in the southern coastal districts (Peter Reeves, Bob Pokrant, John McGuire, 1997:31). Christians comprise 37% of the fisher population of the state, Muslims 30% and Hindus 27%. In the northern and central districts, Hindus and Muslims have preponderance in different districts, but in the southern districts Christian predominance is very marked.

The technology and social structuring of artisanal fisheries in Kerala varies in relation to different ecological conditions along the coast. Artisanal fishery is but a general term for fishing techniques that are far from homogeneous. The design of the craft used along the coastline varies, being closely adapted to the physical geography of the
coast and the habits of the fish. It ranges from the large and costly dug-out or plank-built canoe found in the north to the rudimentary catamaran of the south that consists of just five logs of wood tied together. The size, shape and material of nets used by these boats show an even greater degree of variation. Broadly speaking, in the south a fisherman often owns his own catamaran. By contrast, in the centre and north a fisherman is more likely to be recruited by one of the few men of substance who possess a large canon (Olga Nieuwenhuys, 1989:176-77).

From north to south, the sea becomes rougher and the surf stronger, while the heterogeneity of fish species becomes greater and the proportions in which fish of a certain species occur become smaller. Accordingly, towards the south boats and crews tended to be smaller, boats and fishing gear showed a larger variety and fishing units tended to be increasingly flexible. Thus production structures along the central and northern coasts were more unequal and the fishing communities more stratified than those of the southern coast. Among these artisanal fishers an important accumulation of skill and knowledge of local conditions was preserved.

According to Tietze, U, (1985:40-58), the fishers handled the marine environment with the courage and resourcefulness. Kurien (1997:1) makes the point very forcibly the greatest asset of the fishermen of Kerala is their accumulated knowledge about fish, fish habits, waves, currents and stars which they have, through generations of learning by doing, handed down from generation to generation. Professor K. T. Shah, a leading nationalist economist, was openly speaking to the National
Planning Committee, which the traditional fishing sector as, 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.

Both the Travancore and Cochin state administrations had shown some interest in developing their fisheries and there had been some developments through the Madras Fisheries Department and the institution of the fish curing yards in Malabar before independence. In the first Five Year plan an aid project funded by the Norwegian government called, the ‘Indo-Norwegian Project’ which commenced in three Quilon villages in 1952(Sandven, P, 1959:4) played a key role in changing Kerala's fisheries. The aim of the INP was the introduction of mechanised boats and a new approach to fishing and fish marketing. Initially this mechanisation was in the form of motors for traditional craft, but this proved unsatisfactory to the Norwegians in the Kerala case and the INP development programs switched to European-type boats, with in-board motors.

Mathur, (1978:14) reported from his field work is that mechanisation was the key change among the Mappila fishermen of the north Malabar. With this shift to mechanisation came a concern for larger size units and, initially, a trawling approach to fishing in deeper waters than had been traditionally fished. Mathur reported that, boats fishing in 35-75 fathoms and going as far as 12 KM from the shore. Development plans envisaged an increase in productivity and in employment, the National Council of Applied Economic Research Techno-Economic
Survey for Kerala in the early 1960s gave a picture of a fishing industry moving towards an almost complete shift to a modern sector.

New forms of gear, such as nylon nets, were also introduced and attention was given to new forms of processing. In the past drying and curing had been the methods used but freezing became increasingly important because it was the basis of an export trade in frozen prawns as a commodity for US and Japanese markets (Kurien, 1977:11). Prawns were plentiful in Kerala waters and were previously exported dried to Sri Lanka and Burma. The US and Japanese markets were much more lucrative, however, and as a consequence one of Kerala's chief marine resources led to major changes in both the organisation of fishing and of fish marketing. The prawn catch, and the take overall, reached new heights in 1973, thereafter there was a decline in the matter of great concern to inshore, artisanal fishers and although there was still considerable profit in the export-oriented sectors.

These changes in the fisheries sector meant that newer units of fishing production were developed round the mechanised boats and trawlers and in the south coast, these new units were often in the control of non-traditional fishermen because the capital investment in such boats and gear, and their maintenance, was well beyond the reach of most artisanal fishers. Those who had access to capital from fish trading or broking, or who were linked to other capital resources, were those who became owners and who stood to reap the profits of the new enterprises (Plattue, J.P, 1984:88).
In the northern coast according to Mathur, (1978:16) the wealthier fishermen turned the situation to their own advantage. The fishing industry became increasingly divided between a modern (mechanised) sector able to make considerable profits from exports and a traditional (non-mechanised) sector confined to a domestic market with declining catches and fish stock. In the 1980s the increasing industrialization and internationalisation of the fisheries by mechanisation and by trawling both by Indian companies and by trawlers of other nations (Japanese, Thais and Taiwan), heightened this division and posed dangers which threatened to do serious damage to the both the fisheries and the artisanal fishers.

The effects of trawling were already clear by the late 1970s and early 1980s. Fishers found themselves physically endangered as trawlers worked too close in-shore. Income levels began to reflect the disadvantaged position of the artisanal fishers. It showed that the per capita income of workers in the mechanised sector had risen from Rs 1,610 to Rs 8,029 over the 1970s, while that of workers in the non-mechanised sector rose only from Rs 1,095 to Rs 1,527 in the same period (Kurien, 1977:2). Artisanal fishers still the largest group in the industry were in many ways marginalised. Certainly some groups' entrepreneurs profiting from the export trade, those who worked on mechanised boats, some women for whom new job opportunities had opened up (Gulati, L, 1984:33-39) were better-off but, overall, the situation of the majority worsened.
It seemed that artisanal fishers, unless they joined the modern sector, were unlikely to be able to compete (Meynen, 1986:753). The problem is lack of capital and with their traditional asset, the speed of motors, skill in rowing or sailing, the catch and the nature of trawling and the use of fish-finding equipment, older knowledge and skill in knowing fish of artisanal fishers seemed to be in a position in which they would be completely marginalised. Another problem is that the danger that the coastal marine resources would be depleted to a point from which they could not recover and then those whose livelihood depended on fishing in coastal waters would have the very basis of their work and existence taken from them. Such problems were being canvassed by Goan fishers and by the earliest Kerala fishers unions in the 1960s and they were seen as a very real threat.

As artisanal marine fishing developed from a trade once oriented towards subsistence to an occupation which has nowadays become part of the coastal market economy with its products even being exported to other continents, economic stratification has become more distinct within traditional fishing communities. Coastal India has a population dynamics that is distinct from the rest of the country. Coastal communities have higher population growth rates than the rest of the country, which has resulted in higher densities. This has placed increased stress on coastal eco systems. In coastal areas, high population densities, demographic pressure, changes in land use, pollution and related industrial development added pressure on natural resources (Kaladharan, et. al, 2005:183).
Although both the seafaring traders and fishing communities were not always compatible with each other, they have undergone substantial transformation in the past century as improved technology opened up different opportunities of mechanization, motorization and infrastructure development through roads, railways and communication (Sebastian and Ramachandran, 2005). Consequently, trade improved as old sailing vessels that carried goods across to distant countries and along the coast to distant mark while corporate trading companies operated these large cargo vessels, small scale and traditional fisheries became more capital-intensive competing with industrial fisheries.

The focus shifted from fishing for survival to maximizing profit. Countries and companies began to establish national and private rights over marine resources. One of the major outcomes of this process was a need to establish the Law of the Sea. The Lome Convention of 1982, UN report justified the need for establishing territorial rights of the nations. ‘A tangle of claims, spreading pollution, competing demands for lucrative fish stocks in coastal waters and adjacent seas, growing tension between coastal nations rights to these resources and those of distant-water fishermen, the prospects of a rich harvest of resources on the sea floor, the increased presence of maritime powers and the pressures of long-distance navigation and a seemingly outdated, if not inherently conflicting, freedom-of-the-seas doctrine, all these were threatening to transform the oceans into another arena for conflict and instability’(UN,1998).
This convention enabled countries to establish an Exclusive Economic Zone (EEZ) of 200 nautical miles. Within the EEZ, countries are responsible for managing fisheries on a sustainable basis. Consequently, governments in these countries formulated legal mechanisms and investment incentives. In India, the small-scale fish workers and their unions, however, were concerned that these measures were implemented to privatize and develop marine areas for open ocean aquaculture and other industrial uses (Mathew, 2005).

By the 1990's and with the New Economic Policy, the role of the Government of India decreased considerably, paved the way for liberal policies such as, market conditions alone would stimulate development. Fish landings increased considerably between1985 and 2000 (CMFRI, 2005). The economic and social status of the working fishers, however, did not improve substantially.

At the same time, the new trading class in this sector, especially the marine products exporters, made enormous profits. There also emerged a new owner class of mechanized boats (trawlers) mostly represented by people from outside fishing communities. This was not a uniform process all along the coast. In terms of the fishing technologies used, dramatic changes occurred even among the traditional fishers, especially in the last two decades. More capital intensive and very efficient technologies are in use everywhere. While this has helped traditional fishers to compete with mechanized trawlers, their net returns did not improve. In many areas, there is fierce competition even among the traditional fishers themselves. The resource depletion that this kind of
competition has resulted in, is the crisis faced by the fishers all along the coast. By the late 1980s, the World Bank’s support for developing nations to open up traditional fishing grounds to foreign trawler fleets and entering into joint venture industrial fishing began to impact the traditional fisheries sector in India.

Since 1990s, the Government of India approved over 100 international joint ventures for deep-sea marine fishing and processing in its waters. The goal was the massive export of fish to earn foreign exchange, an opportunity augmented by the Structural Adjustment Program (SAP) advocated and sponsored by World Bank and the International Monetary Fund (IMF). The government approval for joint ventures in fishing rights directly affected the livelihoods of 8 million artisanal fishers (Dietrich and Nayak, 2003).

The Central Government policy was to promote the maritime states through centrally sponsored schemes for providing infrastructure facilities to increase fish production from the inshore waters. It also encouraged deep-sea fishing by larger trawlers in the private sector by providing soft loans (Dietrich and Nayak, 2003). Government did not initiate any management measures in fisheries till late 1970s. It was only in the late 1970s, subsequent to conflicts between the small-scale traditional and mechanized fishers, that the States were asked to enact legislative measures.

At the national level, the basic fisheries legislation is the Maritime Zones of India Act, 1981 (Regulation of Fishing by Foreign Vessels).
Fisheries within the 12-mile territorial limits are managed under the Marine Fishing Regulation Acts (MFRAs) of the coastal States, to protect the interests of fishers on board traditional fishing vessels. MFRA was enacted in response to demand from artisanal fishers operating unpowered fishing vessels to protect their fishing space and equipment from bottom trawlers. During the enactment of this legislation, there was increasing conflict between the trawl sector and artisanal sector over access to fishing space and resources, occasionally leading to destruction of life and property (Bavinck, 2005; Kurien and Vijayan, 1995).

An important legislation for regulating the use of coastal areas on the landward side is the Coastal Regulation Zone (CRZ) Notification of 1991. This notification was issued under the provisions of the Environment (Protection) Act of 1986. CRZ lays out details as to permissible and non-permissible development activities within 500 meters from the highest high tide line of the sea. It defines the coastal stretches of seas, bays, estuaries, creeks, rivers and backwaters which are influenced by tidal action in the landward side, up to 500 m from the high tide line (HTL) and the land between the low tide line (LTL) and the HTL, as the CRZ.

The CRZ has been classified into four categories for the purpose of regulating development activities. Maximum restrictions apply to the ecologically sensitive areas and heritage sites of CRZ-I. Although the notification provided scope for setting up coastal management authorities at the national and state levels to identify and prepare coastal management plans.
Coastal aquaculture had made an impact on the Indian economy despite its increasing conflict with the fishing communities and environmental groups. In India, the early 1990s witnessed the opening of the economy through export-oriented programs. Coastal aquaculture, particularly shrimp farming, was given high priority in terms of policy, strategy and planning at the national level. The government sponsored several people-oriented and production-oriented development programs for augmenting marine product exports (Mulekom et al., 2006; Krishnan and Viswakumar, 2001). A large number of private entrepreneurs and corporations invested in shrimp farming due to the attraction of government subsidies and incentives in terms of soft loans, tax breaks and import tariff relaxation. This, in turn, resulted in very high production of shrimp in the first half of the 1990s in India (Pandian, 2001).

In addition to coastal aquaculture, there were other interest groups such as property developers, tourism promoters and resort builders who were also impacted by the regulations imposed on their development activities. Even the coastal communities were dissatisfied with Floor Space Index (FSI) restrictions imposed on their dwelling units by CRZ regulations (Nandakumar and Murali, 2000).

Apart from CRZ, which impacted all of coastal India, a significant legislation at State level is that of the Kerala Fisheries Development and Management Policy of 1993. It has a strong focus on issues of poverty and livelihood security. The policy highlighted the need for reforming legislation pertaining to the territorial and inland waters to ensure that the
rights of ownership of fishing assets rest only with those who fish. It also called for the right of first sale to be ensured to the fish harvester. Rights to sell the harvested fish by the fisher rested with financiers or landlords who allowed the fishers to build small thatched huts near the seashore. Financiers claimed this right by not charging interest to the money they advanced to the fisher and landlords, not taking rent for the land and house. It is more profitable to claim fish and fix price arbitrarily (Kurien, 2005).

The estimates of the potential fishery resources of India's Exclusive Economic Zone stand at 3.8 million metric tonnes as per 2002 data (FAO, 2004). Of this, 73 percent of the demersal and 71 percent of the pelagic fish resources are found along the west coast. Three-fourths of the fish are caught within 50 meters of the continental shelf where the artisanal fishing communities operate. This resource is distributed in inshore waters (58%), off shore (35%) and deep seas (7%).

According to the estimates, the major shares of the resources are demersal (2.02 million tonnes) followed by pelagic (1.67 million tonnes) and oceanic species (0.24 million tonnes) (CMFRI, 2005). Thus more than half of the marine fish resources are found within the inshore waters, which is a considerably smaller area than the offshore and deep seas. According to the Ministry of Agriculture of the Government of India, the current annual marine fish landing of the country is around 2.7 million tons.
The good fishing season varies in India between the west and east coasts (Madhupratap et al., 2001). For Karnataka and Kerala on the west coast, July to March is considered to be the best fishing season while in the east, Tamil Nadu and Andhra Pradesh enjoy a good season during October to March.

Mechanized fishing units dominate along the west coast, except for Kerala where fishing is dominated by motorized units. The objectives of a planned development in fisheries evolved only after India attained independence. State jurisdictions for administrative purposes were limited to 12 nautical miles from the shoreline while the Central Government controlled the sea beyond that to 200 nautical miles of EEZ. The 12-mile territorial limits for fisheries are managed under the Marine Fishing Regulation Acts (MFRAs) of the coastal States.

MFRAs regulate fishing vessels within their territorial sea mainly to protect the interests of fishers, as traditional fishing was largely concentrated in the inshore waters. There is now recognition of the need for conservation and management, in view of the over-fishing, particularly of coastal waters are given due importance. Modernization that was heavily state subsidized, meant the introduction of new craft and gear and the development of landing centers and fishing harbors thereby centralizing the fish landings. The Central Government played a crucial role in this growth by creating infrastructure through the Centrally Sponsored Schemes, and facilitating a network of scientific and research institutions, organizations and export trade promotion agencies. Meanwhile, state governments created fishermen cooperatives as grass-
root economic organizations to help the poor access political and financial assets. With the shift in economic policy, trade increased and there was increasing pressure to harvest more.

Fishing is one of the most hazardous of all occupations. The majority of people involved in small-scale and artisanal fishing are working in what is often described as the informal sector. These workers are frequently outside the reach of the occupational safety and health services available to other types of workers. The challenge is to extend such services to all fishing communities and to allow for a wider exchange of experiences on how to make improvements in fishing safety and health. The question focuses on the risks and dangers in small-scale and artisanal fisheries. It reviews working conditions, typical risks and dangers, safety approaches in developed and developing countries, accidents associated with the marine environment, navigation and fishing operations, problems associated with boat design and construction as well as other risks and dangers.

Problems:

The study attempted to understand the problems related to fishing occupation. Fishing occupation has many problems such as high operational cost, lack of landing facility, scarcity of kerosene, less price for the fish, lack of transport facility, technological change etc. Artisanal fishing occupation is under threat due to the changes in method of its operation and the high cost of fishing gadgets such gear, net, engine, fuel etc. As market price increases for the operational equipments, fishing
operation becomes too costly for those who are engaged in traditional method of fishing.

**Problems related to marketing:**

Marine fisheries have always been part of the market system as it was never only subsistence based. Fluctuating price mechanisms were prevailing in every fishing village. The middlemen decide the price of the fish once the fishermen land up after a heavy toll in the sea. Mismatch in the market price of fish in relation with the increase of fuel price. But it does not permit the traditional fishermen to revert back to the old style of fishing as it might only head to the poverty. The development in the communication sector has brought both advantages and disadvantages to the sector alike. Since the price of the fish is of fluctuating one, the communication divide helps the merchants and major players in the fishery sector to exploit the traditional fishermen. The price is dictated by the price of the fish in the global market of that time or at least in the nearby markets. Fish harvests are always fluctuating and sale prices are unpredictable. Fishermen are forced to sell their catch to traders at prices far below market rates. This is also discouraging fishermen from the occupation.

**Problems related to storage:**

The cost of adjusting to the standards (certified processing plants) has been very challenging for smaller-scale processor. Domestic marine fish market chains are generally characterized by unhygienic conditions, poor handling of fish and loss of quality (from the boat to the final market). New developments in marketing channels such as mega-grocery
stores are emerging in some towns, with modern fish handling practices and facilities. Smaller-scale fishers are often unable to gain access to these marketing channels due to the poor quality of their product.

Major contributors to this problem are the lack of easily accessible and low-cost credit, and the affordability of basic infrastructure such as ice, cold storage, and cold transport that would enable fishers to maintain better quality and obtain higher prices. The small-scale fishers and traders appear to lack adequate information about market requirements and emerging market opportunities. The lack of storage amenities and processing plants compel the fishermen to yield to the whims and fancies of the middlemen.

**Problems related to mechanized trawling:**

From the early fifties Government started introducing development measures in the fisheries sector. Mechanization of fishing vessels and use of synthetic gear materials brought in drastic changes in the coastal area. The effects of trawling on the traditional fishermen in the fishing villages were disastrous. The main effect of mechanization through trawling and perseining were depletion of fish and drastic decrease of fish production. Perseining is another technique introduced in the state by Indo Norwegian Project for large scale of fishing.

A perseine boat operates in the inshore waters where the traditional fishermen also fish and it affects the catch of traditional fishermen directly. Trawling technology also leads to environmental depletion as the trawling net scraps the bottom of the sea. They destroy the sea bed,
plants, foliage and coral reef which make the marine ecology and breed many species of fish.

**Less catch and reduction of fish resources:**

The economic and ecological destruction, fish production and decrease in fish production, decline in the share of traditional fishermen. The availability of fish catch is directly contributing the standard of traditional fishermen. The unexpected decline of fish population is leading to a sharp fall in their income. The fishing intensity by the trawlers affected the fish stocks in the inshore waters which eventually led to an overall decline in fish landings.

Traditional fishermen were of the view that the depletion in the landing was caused by the operation of trawl net, purse seine and ring seine. Unmanaged marine fisheries face chronic economic overexploitation and overfishing largely because of open access characteristics. Marine catch levels in inshore waters are stagnating and fish stock health is showing some alarming signs of depletion. Another factor contributing to declining fish stocks may be expanding coastal development activities, including land reclamation, construction of ports, bridges, roads, and buildings for industrial and residential purposes, oil and natural gas exploration, pollution from agricultural run-off containing chemicals, fertilizers and pesticides and industrial effluents and urban sewage.
Lack of availability of operational requirement:

Another problem, faced by the traditional fishermen is the increased price in the case of kerosene and diesel over the years. The study shows that in the last many years, the price of the oil increased three times while the price of the fish in the market increased only by one and half times. Ultimately the price of the fish goes down to the traditional fishermen.

Occupational risk and lack of safety guards:

Foreign fishermen make a good catch with the help of sophisticated fishing boats. The use of traditional fiber boats and small trawlers small fisherman is not able to act as them. The fisher folk overwhelmed with woes in large numbers are having tough time fulfilling their both ends meet. ‘Our traditional profession at risk’, says Shivaraman a member of the fishermen community. The poor fisher folk, who are without sufficient safety guard such as life jacket, modern communication facilities and other health care equipments are facing an uncertain during fishing operation.

Tourism and other development activities:

The conflict over the coastal space is mostly between fishing communities and other new users and interest groups. Access to coastal resources is now being thrown open to all, giving a new meaning to the idea of ‘coastal commons’. Conflicts are increasing with a number of communities being displaced from coastal areas or being threatened with displacement in the name of developments activities particularly tourism. The access and visibility of the sea is very crucial for fishermen as part of
their daily decision-making, traditional ecological knowledge, and basic livelihood activities such as the launch of boats, lying of shore seines, drying of fish, mending of nets, berthing of boats and many other social functions (Bharathi, 1991, Salagrama, 2006, Praxis, 2005). Furthermore fishermen have odd hours of fishing and also make unplanned trips based on other fisher’s landed catches, which is possible only if they live on or near the shore (Kuriakose 2006).

The problems of occupation at a glance:

- Fishing communities have traditionally been one of the main inhabitants of coastal areas.

- Marine fishing communities in India are known to be highly skilled, having fished for generations along the coast.

- Nearly half of this population (over 1.6 million people) is engaged in active fishing and fishery-related activities in the country.

- The fishing craft and gear have evolved over time and have, traditionally been in tune with local geographical/ ecological features.

- The fisheries sector contributes significantly to the local and national economy, to employment and to food security.

- Fishing communities tend to be socio-economically vulnerable, particularly along the east coast of India.
• Many communities, till today, lack clear titles to the land they live and work on or well-defined access rights to the waters they have customarily fished.

• Tourism, urban expansion, ports, harbours, waste and sewage etc. are taking a heavy toll on coastal and marine ecosystems, directly affecting productivity and health of fisheries resources.

• Pollution, in particular, is becoming a big problem for fishing communities, especially near industrial areas.

• Impact is greatest on those traditionally fishing in inshore areas using non-mechanized craft, including women engaged in gleaning/collection activities.

• Coasts are, at the receiving end of both land- and sea-based activities, such as industry, intensive agriculture, irrigation, shipping and oil and exploration.

• The impacts of unsustainable and polluting practices on land and sea finally concentrate in the coastal zone. The health of coastal areas is a litmus test for the overall health of land and sea-based ecosystems.

• The CRZ Notification has been poorly implemented, and violations have been blatant.

• There are no explicit recognition traditional and customary rights of fishing communities in the coastal.
Fishing communities are not the part of decision-making processes related to coastal area management planning and development.

Some suggestions are compiled after discussing with village fishermen groups.

1) There is a need of artisanal zone for fishing of artisanal small scale sector. Majority of the fishing people depend up on the coastal and near shore waters, such zone will help to protect traditional fisherman from large scale fleets using destructive gear for heavy catch. 2) There is a need to safeguard the traditional fisherman fishing zone, for the traditional and mechanized fishing group. 3) There is a need of restricting the number of mechanized fishing boats by enforcing strict rules and regulations in order to protect the interest of traditional fisherman. 4) During the trawling ban period sufficient financial help and other assistance need to be provided to village people in order support and maintain their day to day living. 5) There is a need for better and reasonable prices for fishermen produce. Marketing societies are to be organized for them and it should be organized by the fishing community themselves to strengthen their cooperative spirit. 6) Conservation and management of coastal and marine resources will be benefit to small-scale fish workers. 7) The Coastal Regulation Zone (CRZ) Notification, 1991 need to regulate for the development of coastal strip.
8) Government should draw attention to the violations of CRZ Notification and regulate construction. 9) The fishing communities should be given the right to use coastal lands for occupational purpose (landing, selling, salting, smoking, curing and drying of fish, parking and maintenance work of boats and implements etc.). 10) Infrastructural facilities shall be providing by the state government agencies for the development motorization of the poor small boat owners.