

Marine Fish Marketing in North Kerala: An Analysis on the Role of Intermediaries in Domestic Fish Marketing

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Abstract: In Kerala, the marketing organization is surrounded by conventional accoutrements and lacks by and large modern system of management. Several projects like co-operativization of production, processing and primary sale of fish were introduced to free the fishermen from the exploitation of middlemen. Even, after the initiation of these projects, auctioning of fish at various centres was largely controlled by the middlemen, who extracted a major share of the gross sale proceeds as auction charges. They often failed to pay the fishermen the promised prices when the deals were finally reconciled and the fishermen who are indebted to the middlemen have been absolutely vulnerable in exercising any control in the sale of fish landed by them. This study focuses on analysing the role of intermediaries in the marketing of marine fishes with special reference to North Kerala.

Key Words: Fish marketing, Middleman, Fish Marketing Channels

Introduction

Fishing is considered as one of the oldest means of livelihood of mankind. But now it has transformed into a multifarious industry called fisheries. The rapid introduction of technological innovations have resulted in the development of fisheries sector in several countries, but in countries like India, it is characterized by the co-existence of traditional, modern and ultra modern sectors. The economic importance of fisheries and the successively progressive technological developments in this sector have resulted in the transformation of this primitive occupation into a major industry. Although a considerable progress has been achieved in technological aspects in fisheries, marketing is yet to become an organized system.

In spite of the importance of this sector to the economy, the fishery sector had been facing severe problems like the fisher folk's misery and poverty, violent fluctuations in output, exploitation of the fisher folk by the money lenders and low output prices received by the producers. But, these problems seldom received attention by the academic community or the administrative authorities till the dawn of independence. Since the 1950s, the topic of discussion was mainly the socio-economic problem of fishery sector and the main reason for the awakening of interest was the introduction of mechanized fishing and the consequences that followed.

Most of the earlier studies in this area concentrated on the socio-economic conditions and cultural and anthropological aspects of the fishermen communities. Recent studies are mainly connected with the technological change in the sector and the impact of liberalization on fisheries sector. Very few studies regarding fish marketing and the impact of technology on markets and marketing of fish area are available now. A district wise analysis on the marketing of marine fish with special reference to Kerala State was conducted by John Kurien (1982). The study reveals that the average fish prices are higher in Trivandrum district compared to other districts. The reasons pointed out by him are, i) the proximity of the State's capital city with high and middle income consumers may result in a higher effective demand; ii) landings of high quality fish species such as seer, tuna etc. are relatively higher; iii) the introduction of Fishermen Co-operative which have improved fishermen's power.

In 1985, Panikkar and Sathiadas studied the marketing system of marine fish in Kerala State and also the price spread of some commercially important marine species in Kerala. They concluded that fishermen get a better share for quality fishes having high consumer preferences than for cheaper varieties. For them an efficient transportation system is very essential for the improvement of marketing of fish.

A study conducted by Sathiadas and Panikkar (1992) on marine fish in Madras region of Tamilnadu examines the role of middlemen in the fish marketing and discussed, the marketing margins and producers and intermediaries share in consumer's rupee for commercially important varieties of marine fish.

Objectives of the Study

1. To examine the fish economy of Kerala and the nature of domestic fish marketing in Kerala.
2. To identify the fish marketing channels in operation in North Kerala
3. To estimate the price spread of fish marketed through different channels and to analyse the share of middlemen in each channels.
4. To analyze the existing marketing system and the obstacles in the growth of fish marketing.

Materials and Methods

The current study depends on both primary and secondary data. The domestic marketing structure of fish is analyzed with the help of primary source. On the basis of oceanographic parameters, the Kerala coast can be divided into three zones-South, Central and North. For analyzing the domestic fish marketing structure in Kerala, North zone which comprises of Kasargode, Kannur, Kozhikode and Malappuram is selected, as it covers nearly half of the length of coast line of Kerala. A structured schedule was prepared to interview 300 respondents. The major sources of primary data for analyzing the marketing system are the auctioneers, the whole-salers/commission agent, retailer at the landing centre and consuming centre and the vendor who were selected randomly. Statistical packages like Mega Stat, Gretel and E views 8.0 version have been used for data analysis.

As fisheries sector still remains as an unorganized sector, there is greater difficulty in getting appropriate published data. The major sources of the secondary data used in this study are, i) both published and unpublished data by the institutions related to fishing industry like the Central Marine Fisheries Research Institute (CMFRI), The Marine Products Export Development Authority (MPEDA), Central Institute of Fisheries Technology (CIFT), South Indian Federation of Fishermen Society (SIFFS), Program for Community Organization (PCO); ii) Publications from the Department of Fisheries, Government of Kerala, Department of Animal Husbandry, Dairying and Fisheries, Government of India and other NGOs, iii) Marine Fisheries Census Reports and Marine Fisheries Information Service, FAO Reports; iv) the Statistical Portal (Statista).

Sample Design: To examine the objective of the study, a primary investigation is carried in this North zone. A structured schedule is prepared to interview 300 respondents. Depending on the number of active fishermen in the field, the highest number of respondents is from Kozhikode (105 respondents), followed by Malappuram (87 respondents), Kannur (60 respondents) and Kasargode (48 respondents). The sample consists of 15 auctioneers, 30 wholesalers / commission agents, 60 retailer (landing centre), 75 retailer at the consuming centre and 120 vendors and these categories are excellent enough to give essential information. In Kozhikode district, the interview is conducted in Beypore, Kozhikode Central fish market, Koyilandi, Puthiyappa and Chombala fish markets. With reference to Malappuram, the data is collected from Ponnani, Parappanangadi and Thanoor fish regions. Chalil Gopalapetta, Thayyil, Puthiyangadi Kadappuram and Dharmadam are the fishing villages identified for the study in Kannur. In Kasargode, the markets identified for study comprises of Kadangode, Kasaba beach, Koyipadi and Pallikkara. Data on landing centre prices, wholesale and retail prices of different varieties of fish are collected by tracing the marketing channels. Information on various marketing costs at different stages is also collected. Marketing expenses which includes loading and unloading charges, transport charges, cost of ice, market fee etc. are collected through personnel interview with the 300 respondents. As the production of fish is greatly influenced by the seasonal variations, the data has to be collected in accordance to seasons. On the basis of quantum of fish catch, the fishing season is divided into three – peak, normal and lean. The fish catch at its peak from November to February, which is considered as the peak season. March to May belongs to the normal season and June to October is recorded as the lean season. The lean season is judged as the most difficult time period for the fishermen due to fish shortages which in turn results in financial difficulties.

Results and Discussions

The advancement of fisheries in an economy is mainly dependent on the efficient functioning of the marketing organization. Marketing is the process of bringing together the producers and the consumers. The fisheries sector has become highly industrialized and so the notion and purpose of fish marketing also have taken a new role in business activities. As different from the marketing of other agricultural products, marketing of fish is faced with unique problems largely originating from the nature of fish production. These include greater ambiguity associated with fish production, highly perishable nature of fish, assembling of fish from numerously dotted landing centres, too many species and so many demand patterns, violent and frequent fluctuations in prices, difficulties in adjusting supply to variations in demand and need for transportation of fish in specialized means of transport (Rao, 1983). The effectiveness of a marketing system can be examined by looking at the proceeds it receives from the sale of the output. Generally in fishing industry, economic proceeds are not assured due to the unpredictable nature of harvest of sea fisheries. Fish marketing involves operations like collection, processing and distribution of the product where the marketing channels have a vital role to play.

The sales systems which can usually be found in fisheries are classified into several heads (FAO, 1994).

- i) Direct sales: Seller and buyer determine quantity and price in negotiation; or the seller indicates a price in order to induce the buyer to make an offer to buy. The transfer of ownership is affected without a specific organization of the sale or pre-established contracts.

- ii) Auction: Buyers compete for the right to buy by making offers. These may be ascending or descending bids or offers made simultaneously, the latter probably being the more important method.
- iii) Contract sales: Transaction details of which the prices, quantities and the conditions are established between buyer and seller before hand, usually at the beginning of the fishing season.
- iv) Fixed prices: Public administration or a sales organization fix the producer's price for a specific period before the fishing season starts and may include a system whereby producers are compelled to sell to pre-determined buyers.
- v) Commission sales: The consignee sells on behalf of the consignor and receives a commission, usually a percentage of the turnover, for his services. The consignee does not take title of the merchandise.

With reference to the fish marketing structure, depending on the function performed by each channels in the sales, the market functionaries are being identified. The chief markets functionaries arise in fish trade are the middleman, wholesalers, commission agents and retailers. Fish trade is smoothed by persons who are specialized in purchase or sale, called middlemen (Mamoria C.B and Joshi R.T, 1977). It is very difficult to have a common analysis on the economics of fish marketing as it widely varies from place to place. Here is an attempt to analyze the structure and pattern of domestic fish marketing of marine fresh fish in Kerala with special reference to North Kerala (Malabar Coast).

Profile of the Study Area

Nine districts out of fourteen, borders the Arabian Sea, giving Kerala a coast line of 590 kilometer. The coastal areas of the districts of Malappuram, Kozhikode, Kannur and Kasargode comprise the North zone or the Malabar Coast. The length of the coastline of North zone amounts to half of Kerala coast, i.e., 293 kilometer, which is 49.6 percent of the total coastline. Details of coastline of Kerala are described in table 1.

Table 1: District Wise Distribution of Coastline of Kerala

Zone	Name of marine district	Length of coastline	
		Length in kms	Percentage
North Zone	Malappuram	70	11.8
	Kozhikode	71	12.0
	Kannur	82	14.0
	Kasargode	70	11.80
		293	49.6%
Central Zone	Thrissur	54	9.2
	Ernakulam	46	7.80
		100	17%
South Zone	Alappuzha	82	13.9
	Kollam	37	6.3
	Thiruvananthapuram	78	13.2
		197	33.4%

Source: Department of Fisheries (2007), Marine Fisheries Statistics of Kerala, Government of Kerala.

There are 23 fishing villages in Malappuram, 35 in Kozhikode, 11 in Kannur and 16 in Kasargode (Marine Fisheries Census, 2010). Table 2 gives district wise information about the number of fish workers in North zone.

Table 2: Details of Fish Workers in North Zone of Kerala

District	Active Fish Workers	No. of families
Malappuram	22238	14940
Kozhikode	20200	14157
Kannur	5404	4331
Kasargode	7669	4637
Total	55511	38065

Source: Department of Fisheries (2010), Marine Fisheries Census, Government of Kerala.

There are about 55511 active fish workers in North zone and the highest number of people engaged in fishery activity is in Malappuram with 22238 active fish workers followed by Kozhikode with 20200 fish workers.

Malappuram: With regard to the population, the fishing community of Malappuram district is entirely Muslims. There are a few Hindu fishers in Southern villages. Both traditional and mechanized sectors are prevalent in Malappuram, but motorized crafts are having prominence. As per the Marine Fisheries Census, 2010, there are 816 outboard crafts, 220 mechanized and 246 non motorized crafts functioning in Malappuram district. Ring seines are of great concern for this area. As in Calicut, the ring seine technology has been imported from Alappuzha with many Alappuzha fishermen coming over to work with and train the local fishermen. Similarly Malappuram fishermen have chosen the Aleppey style single boat ring seine operation unlike the double boat ring seine operation used in Thrissur.

The coming of the Thanguvalloms has not lead to any serious displacement of the dugouts. The medium, dugout operations also appear to be thriving with diversified operation, using gill nets, mini trawls and Vattavala (a boat seine). During certain seasons, these units also double up as carriers for the ring seine units getting 25 percent of the catches as shares. The same dugout would operate during the day (MICTRA, 2006). Very few villages make use of shore seine. Large mesh gill nets are used in few villages with Parappanangadi and Marakkadavu having more units.

Yet another feature of Malappuram fisheries sector is the presence of the semi-dugout craft called Chemban thoni which is used as an alternative to the medium dugout. This boat has a flat bottom which is generally carved out of a single log.

The gears used mainly comprise of ring net, chala vala, mathi vala, ozhukkan vala, chooda vala and maalan nets. The ownership of fishing vessels is on a sharing basis, 40 percent by the owners and 60 percent by the workers. Mini trawling is an important feature. Rules relating to trawling and permissible limits are violated.

The important fish landing centres in the district are Parappanangadi, Thanur, Koottayi and Ponnani. The marketing system is completely under the control of middlemen and large merchants. Women play virtually no role in the fisheries activities. Ponnani with seven fishing villages and Tirur with sixteen fishing villages constitute the entire fishing sector of Malappuram district. List of marine fishing villages in Malappuram district are given in table 3

Table 3: List of Marine Fishing Villages in Malappuram

Sl.No.	Taluk: Ponnani	Sl.No.	Taluk: Tirur
1	Marakkadavu	1	Alungal Beach
2	Meentheruvu	2	Arayankadapuram
3	Mukkadi	3	Cheerankadapuram
4	Palappetty	4	Edakkadappuram
5	Puduponnani	5	Elarankadapuram
6	Thekkekadavu	6	Kadalundinagaram
7	Veliyamkode	7	Koottayi
		8	Kormankadapuram
		9	Ossankadappuram
		10	Pallivalappu
		11	Padarakadapuram
		12	Paravanna
		13	Parappanangadi
		14	Purathur
		15	Puthiyakadapuram
		16	Thevarkadapuram

Source: Department of Fisheries (2007), Marine Fisheries Statistics of Kerala, Government of Kerala

Kozhikode : The fishing population here is more or less equally balanced between the Hindu and Muslim communities. Most villages have both communities living together, though there are a few villages which are 100 percent Hindus or 100 percent Muslims. Traditional and artisanal methods are slowly giving way to increasing mechanization. It was in Kozhikode, that the conflict between ring seine and Kollivala (boat seine) during mid 1990s resulted in the elimination of the latter. When Thanguvallom was introduced in the southern part of the district, it totally displaced the Dugout canoe – Kollivala combination locally. But in the northern part of the district Ranivala technology was adopted which enabled them to use their existing craft. Shore-seines with Dugouts and Cast nets are widely used. In some centres, the fishermen tie a bag shaped net to their waist and swim close to the shore in an attempt to catch fish without the use of any craft.

More local fishermen in Kozhikode depend on large mesh drift nets and also on hook and line when compared to other districts of the northern zone. Chaliyam and Badagara are most prominent for large mesh drift nets. Hook and line fishing is done at Badagara, Elathur, Puthiyakadavu and Chaliyam. Elathur is particularly well known for shark fishing with hook and line. Mini trawl net operations are more common in Chombala, Kuriyadi and Chaliyam. Ownership of vessel is mostly on sharing basis 60 percent by the owner and 40 percent by the worker. In the case of 50 – 50 percent, there is no share system. Exploitation of marine resources is quite high and trawling regulations are violated. Entering of other crafts to Kozhikode region for the purpose of fishing is common during peak season. It often results in conflict and the violation of law and order.

The control of middlemen and merchants over marketing is quite considerable though fishermen appear to have much greater freedom in the southern part, where their landing centres are close to the Kozhikode Central market. Chombala, Badagara, Quilandy, Puthiyappa and Beypore are the major landing centres, though; fish is landed in many of the other locations also. Women also participate in fishing in the villages of Chombala. The presence of mechanized trawlers is quite strong in Kozhikode with large numbers anchored at Beypore and Puthiyappa.

Vadakara, Kozhikode and Koyilandy taluks constitute Kozhikode district. The list of the marine fishing villages in Kozhikode is given table 4.

Table 4: List of Marine Fishing Villages in Kozhikode

Taluk: Vadakara	Taluk: Kozhikode	Taluk: Koyilandy
1. Azhiyoor	1. Kampuram	1. Cheriyanangadu
2. Vadakara	2. Elathur	2. Kappad
3. Chombala	3. Beypore	3. Ezhukudikkal
4. Kuriyadi	4. Chaliyam	4. Iringal
5. Muthungal	5. Kappakal	5. Kadaloor
6. Madappally	6. Kozhikode South	6. Kannankadavu
7. Madakkara	7. Marad	7. Kollam
	8. Pallikkandy	8. Meladi (Payyoli)
	9. Puthiyakadavu	9. Moodady
	10. Puthiyangadi	10. Koyilandy
	11. Puthiyappa North	11. Thikkody
	12. Puthiyappa South	12. Vanmugham
	13. Thoppayil	13. Veliyanangadu

	14. Vellayil	14. Virunnukandy
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Source: Department of Fisheries (2007), Marine Fisheries Statistics of Kerala, Government of Kerala.

Kannur: Kannur district has fairly low density of active fishermen. Most of them belong to Muslim community and they are concentrated around Puthiyangadi, Kannur city and Thalassery. In between these major centres, there are even long stretches of coast with little or no fishermen. Both the traditional and mechanized methods are used. The Ranivala which is locally labeled as Kudukku vala have completely displaced the traditional Kollivala units. Small and medium Dugout canoes make use of Gill nets. Shore seines are mainly used in three villages. A number of medium Dugout canoes in the southern part of the district around Thalassery use the Mini Trawl nets as a diversification. Lobster nets are in use with small Dugouts. Even small non-motorized Dugouts are in operation in certain villages. The traditional Hook and Line, which is locally known as Beppu Chooda is used in Kannur city. Mini trawling is a constant feature. Mechanized boats operate mainly from Azheekal or from the fishing harbor at Kannur city. Encroachment of other vessels from other areas resulted in the conflicts and this was common in Puthiyangadi and Thayyil. Fish marketing is controlled by big merchants and middlemen and to some extent women also participated in the marketing process. Kannur, Thalassery and Thaliparamba taluks constitute Kannur district. The list of marine fishing village in Kannur is given table 5.

Table 5 : List of Marine Fishing Villages in Kannur

Taluk: Kannur	Taluk: Thalassery	Taluk: Thaliparamba
1. Azhikode 2. Edakkad-Muzhippilangad 3. Kannur City 4. Mattool 5. Puthiyangadi Kadapuram 6. Thayyil	1. Chalil - Gopalpetta 2. Dharmadam- Pallissery 3. Kurichiyil	1. Kawai 2. Palacode Kadapuram

Source: Department of Fisheries (2007), Marine Fisheries Statistics of Kerala, Government of Kerala

Kasargode: In Kasargode district the density of fishermen population is generally low. The density seems to be particularly low in the northern part of the district as in this area majority of the population depends on the agriculture sector for their subsistence.

The main fishing operation is that of the Ring seine. Fishermen of Kasargode appear to have independently developed the Ring seine almost at the same time the Ring seine made its appearance in Ernakulam. The Kasargode Ring seine called Ranivala is slightly different from that of the Ringuvala developed in Ernakulam. Gill net operations with medium Dugout canoes are also commonly in use in this district for catching oil sardines, mackerels, pomfrets etc. In Manjeswaram and Kottikulam, Drift net operations are prominent. In Manjeswaram, it is the native fishermen who use Drift nets whereas in Kottikulam, it depends on the labour of migrants from the South. In general, fishing in Kasargode is largely mechanized. The district has very few non- motorized crafts which are mainly the small Dugout canoe. The traditional Hook and Line operations known locally as Beppu Chooda are conducted by the Muslim fishermen of Manjeswaram. The Ring seine units are largely owned by groups, while the Gill net units are individually owned. There is a strong link with the mechanized sector of Mangalore in Karnataka state with both labour and capital participation. Permissible limits and regulations are violated both by natives and those from adjoining Karnataka. With reference to marketing, middlemen play an important role. Women are active participants in marketing activities in Kasargode district.

List of the marine fishing villages in Kasargode district are given in table 6. Hosdurg, Kasargode taluks constitute the district.

Table 6 : List of Marine Fishing Villages in Kasargode

Taluk: Hosdurg	Taluk: Kasargode
1. Ajanur 2. Hosdurg 3. Kadangode 4. Kottikulam 5. Padannakadapuram 6. Pallikara 7. Poonjavikadapuram 8. Thaikadappuram 9. Trikaripur Kadapuram 10. Valliaparamba	1. Kasba Beach 2. Kavugoli 3. Koyipady 4. Sheriya 5. Bangra – Manjeswar 6. Kizhoor

Source: Department of Fisheries (2007), Marine Fisheries Statistics of Kerala, Government of Kerala.

Fish Market Structure in North Kerala (Malabar Coast)

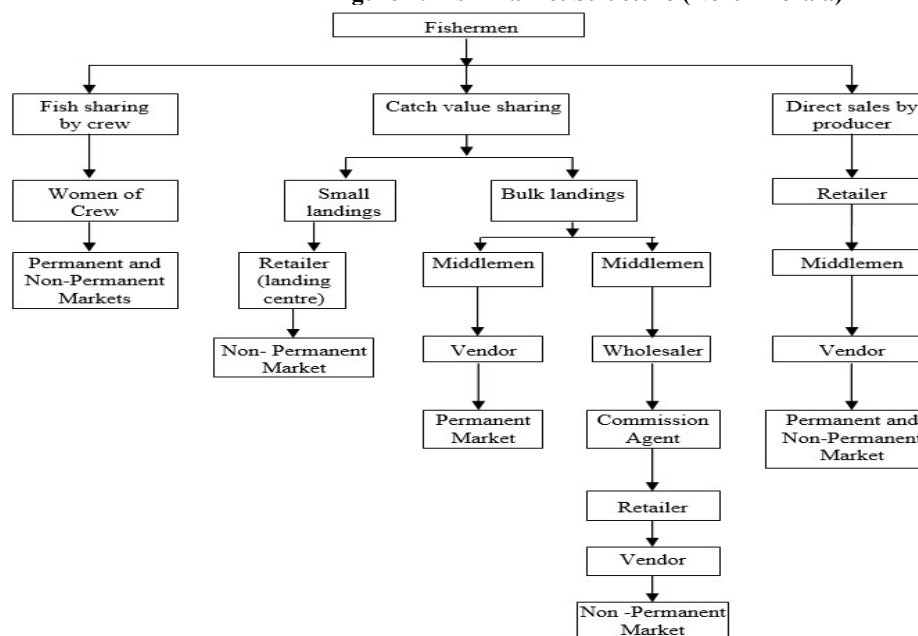
The general practice in the market is found to be the same in North Kerala. The archetypal North Kerala fish market structure begins with the fishermen who are the main purveyor of fishes. In this region, the catches are disposed in three ways.

a) Sharing of fish by crew – In this system, the catches are shared by the members of the crew. Generally, it is then passed on to the women of the crew to sell it to the permanent as well as to the non - permanent markets. The sharing is conducted among the crew members and also the boat owner receives a certain percentage of the catch. Usually, the crew members get 60 percent of the catch and the remaining 40 percent is the share of the boat owner. The sharing between owner and crew will depend on the fishing method used. In the case of large Gill nets, the sharing is 50:50 ratios. But for Ring seine it is 40:60 and for small Gill nets one shares each for craft, gear, engine and crew member.

b) Catch value sharing – The marketing frontward association greatly depends on the size of landings and species variety. In case of small landings, the producers themselves sell the fish to the fish vendors, through auctioning or bargaining and if the quantity is small, vendors do not go to the permanent markets. In case of bulk landings, the catch is sold to the fish vendors or to the wholesale merchants through the intermediary. The intermediaries (middlemen) are of two types – i) those who charge fixed commission on the gross value of catch, which is usually five percent to eight percent of gross value of fish, and, ii) those who do not charges commission, but hold the right of buying the catch if the same is an export variety. The middleman commanded the greatest power in the structure and they also played a vital role by linking the producers and the consumers. They have a strong control over the fishermen, as the fishermen are indebted to the middlemen who even play the role of a money lender.

c) Direct disposal by producer – In this case, the producers themselves sell the fish catch directly to the permanent domestic market. The fishermen directly get involved in the marketing process and as such they get to know the market and the prevailing demand in the market. Moreover it gives them control over their produce or catch. The share of fishermen in consumer's rupee will be very high in this method of operation. The typical fish market structure of North Kerala (Malabar Coast) is highlighted in the chart (Figure 1). From the chart given below, it is evident that the middlemen play an important role as he is involved in almost every marketing linkage. Auctioning or bargaining is the main technique of fixing the price of fish. In the case of auction, bidding is done from the lower price to the upper price limit and the highest bid is fixed. Bargaining takes place only when there is a sudden decline in price or when there are few buyers. An upper price is set and agreed in such cases. The payment is made after a time lag, lengthening from three days to three months and this payment duration depends on the mode of market linkage. For small scale vendors the payment is made after three or five days. In the case of wholesale merchants, it is after one or two weeks, but it ranges from two to three months in the case of exporting agents. In case of Government or Co-operative society intervention, the auction process will be undertaken by the official authorities on behalf of the member fishermen. The registered members only can take part in the auction process. From the landing centre, the catches will be handed over to the officials for auction and the fishermen will be provided with a chit indicating the quantity of the catch and the identification code. The payment will be controlled by the society. In case of a person who has taken loan from the society, a certain percentage of the money will be kept hold off by the society as part of payment of the loan. Usually the intervention of the Government or the society helps to reduce the role of intermediaries in the marketing process and to make the producers (fishermen) reap the fruit of their endeavor.

Figure 1: Fish Market Structure (North Kerala)



Fish Marketing Channels: The fishes are distributed by the producers to the consumers through various marketing channels. Certain commonly operated marketing channels are

- Channel I – The producer sells fish to the consumer directly.
- Channel II – The producer sells fish to the retailer, and the retailer sells it to the consumer.
- Channel III – The producer sells fish to the wholesaler, who, sells it to the retailer and then it reaches the consumer.
- Channel IV – The producer sells the fish to the auctioneer, who, sells it to the wholesaler / commission agent, he then sells the fish to the retailer and finally to the consumer.

The main marketing channels that we come across in North Kerala (Malabar Coast) are -

- Channel I : Producer – Retailer (at the landing centre) – Consumer
- Channel II : Producer – Auctioneer – Vendor – Consumer
- Channel III : Producer – Retailer (at the landing centre) – Auctioneer – Vendor – Consumer
- Channel IV – Producer – Auctioneer – Wholesaler – Commission agent – Retailer (at the consuming centre) – Vendor – Consumer.

The market intermediaries who play their role in the distribution of the catch are auctioneers, wholesaler, retailer, commission agent and vendor. Auctioneers help the fishermen in disposing the catch through auctions. In North Kerala the auctioneers are known by several names like 'Tharakans' and 'Addayi'. The auctioneers receive a certain commission which normally comes to four percent to ten percent of the sale proceeds. This commission rates vary in accordance to the variety of species, the value and even the quality. The auctioneer also plays the role of a money lender. He advances money to boat owners, which, in turn will be repaid either in terms of money or in terms of fish. This obligation from the part of the boat owner gives the auctioneer the right to control the auction of the fish. The wholesaler in this region plays a dual role. They purchase fish from the auctioneers. With the help of daily wage labourers, they pack the fish in boxes with crushed ice, then load it into vehicles and transport it to various markets where either an auctioneer receives the boxes or else the wholesaler himself acts as a commission agent and then sell it to the retailer. In each market he will be having permanent agents to purchase the fish and the wholesalers have a good knowledge about the market demand for the product.

The retailers are of two types – retailers at the landing centre and retailers at the consuming centre. They purchase fish, either directly from the producers or from the auctioneers. The retailer who works far away from the landing centre, purchase fish from the wholesaler or commission agent. The fish is then procured with the help of daily wage labourers and is then sold to the vendors. The vendors purchase their fish either from the retailer or from the auctioneer. These vendors usually have prominence in non-permanent markets. In case of women vendors they carry fish in baskets or aluminium vessels, whereas, in the case of men, they use cycles, motor cycles etc. They also handle the sale of low priced varieties of fish. The commission agents actually stand as an intermediary between the wholesaler and the retailer. He purchases the fish for the retailer at the consuming centre (far from the landing centre) as per the demand of the retailer. The agent's charges commission from the retailers for the services rendered.

Price Spread of Fish Marketed in North Kerala : The main objective of any market is to link the producer and the consumer. The efficiency of a market greatly depends on the marketing mechanism adopted by the market which helps in transferring the commodities from the production point to the consumption point. Price spread helps to analyze the efficiency of the market. In this study, attempt has been made to identify and analyze different market channels and also the market efficiency. The study attempts to test the hypothesis that larger the length of marketing channel, the producer's share in consumer's rupee goes on decreasing.

Market Intermediaries and their Marketing costs : The market intermediaries who play a major role in the marketing of fish in North Kerala are the wholesalers, retailers at the landing and consuming centre, the auctioneers or the commission agent and the fish vendors. Let's examine the marketing costs incurred by each of these intermediaries in detail.

a) Marketing cost of the wholesaler: The wholesalers come into operation only in the case of bulk landings. They purchase fish in bulk through the auction sale and then sell it to the commission agent or in the absence of the commission agent in the chain; he sells it directly to the retailer at the consuming centre. In certain circumstances the wholesaler himself acts as a commission agent also. Mostly the purchase of fish is on credit. Wholesalers employ permanent labourers for packing the fish, transporting the fish to the destination point and also for loading and unloading. The fish will be sold immediately to the retailer either directly or through a commission agent and always bargaining is found in this process and so there is no chance of incurring cost for spoilage and wastages. The cost components of wholesalers are shown in Table 7.

Table 7: Marketing Cost of Wholesalers

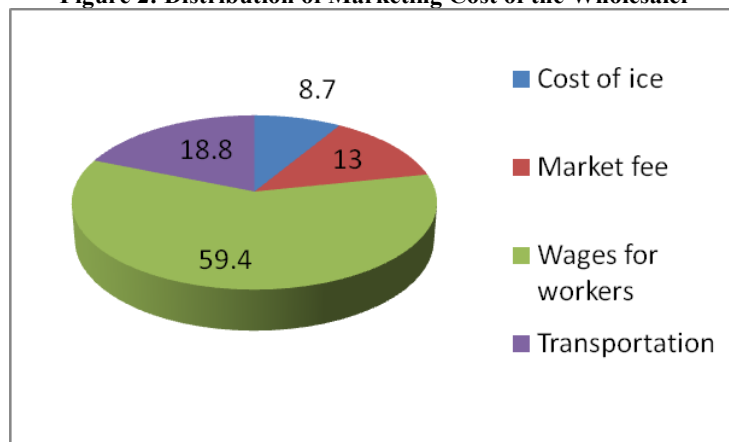
Item	Cost (Rupees per kilogram)
Cost of ice	1.2
Market fee	1.8
Wages for workers	8.2
Transportation	2.6

Total	13.8
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Source: Researcher's calculation based on primary survey

The total marketing cost is found to be ₹13.8. Maximum expenses are on salary for the workers (59.4 percent) followed by the transportation charges (18.8 percent).

Figure 2: Distribution of Marketing Cost of the Wholesaler



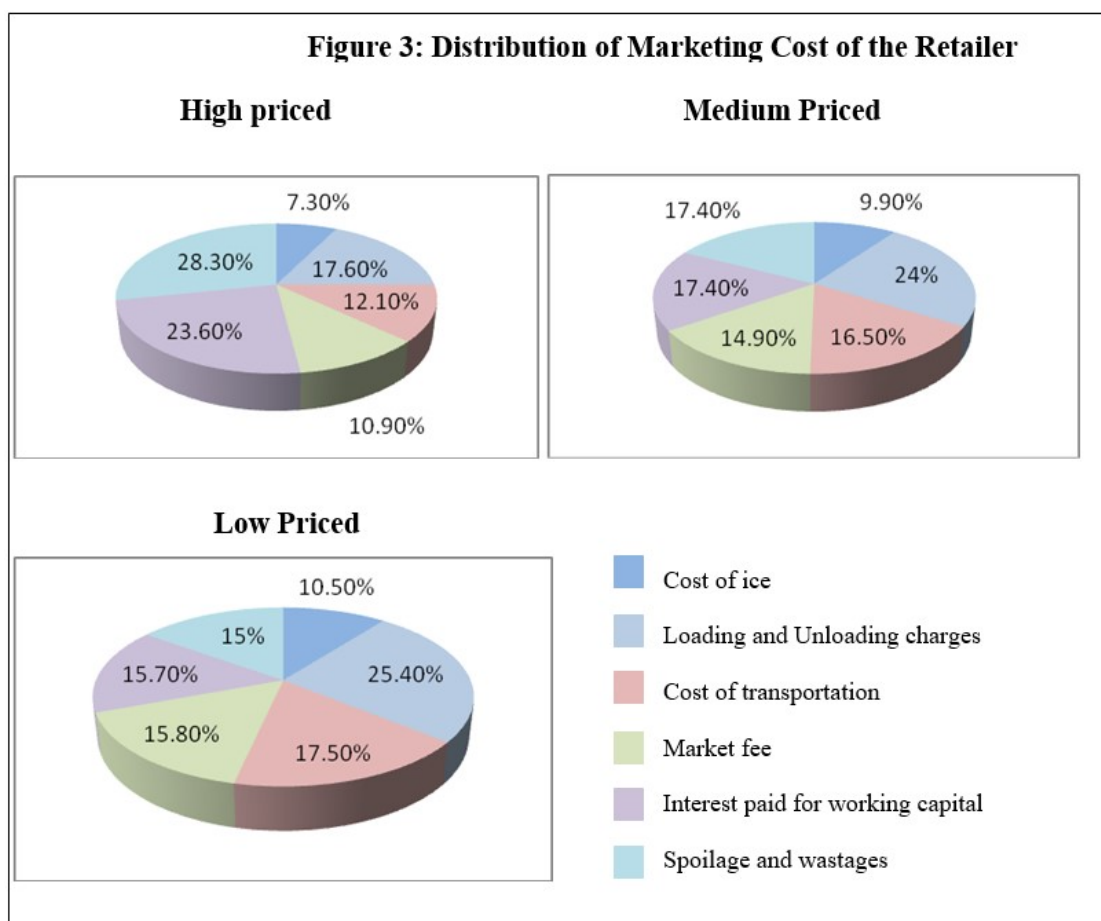
b) Marketing cost of the retailers: The retailers purchase the fish from the producers directly or in the case of bulk landings they purchase it from the wholesaler / commission agent. After purchasing the fish it get transferred to the consumer or to the vendor. Usually the customers pay in cash and in certain cases of personal relationship, credit payment is allowed. At the beginning of the sales especially at the morning, the retailers use to have a better bargaining power, but during the evening time period, the bargaining power shifts to the consumers, depending on the quantity of the unsold fish in his basket. The costs incurred by the retailers are mainly the loading and unloading charges, the cost of ice, the transportation cost, the market fee, the interest paid for working capital and the spoilage and wastage. The cost details are shown in Table 8.

Table 8: Marketing Costs of Retailers
(Rupees per kilogram)

Item	High Priced category	Medium priced category	Low priced category
Cost of ice	1.2	1.2	1.2
Loading and Unloading charges	2.9	2.9	2.9
Cost of transportation	2.0	2.0	2.0
Market fee	1.8	1.8	1.8
Interest paid for working capital	3.89	2.1	1.79
Spoilage and wastage	4.7	2.1	1.72
Total	16.49	12.1	11.41

Source: Researcher's calculation based on primary survey

The total marketing cost is estimated at ₹16.49 for the high priced category, ₹12.1 and ₹11.41 for the medium and low priced categories respectively. Distribution of marketing costs of the retailer is clearly depicted in figure 3.



In all the categories maximum expenses are on loading and unloading followed by spoilage and wastage and on the interest paid for working capital. The spoilage and wastages are high in the case of high priced varieties. The retailer can reduce the cost by resorting to some preservation techniques.

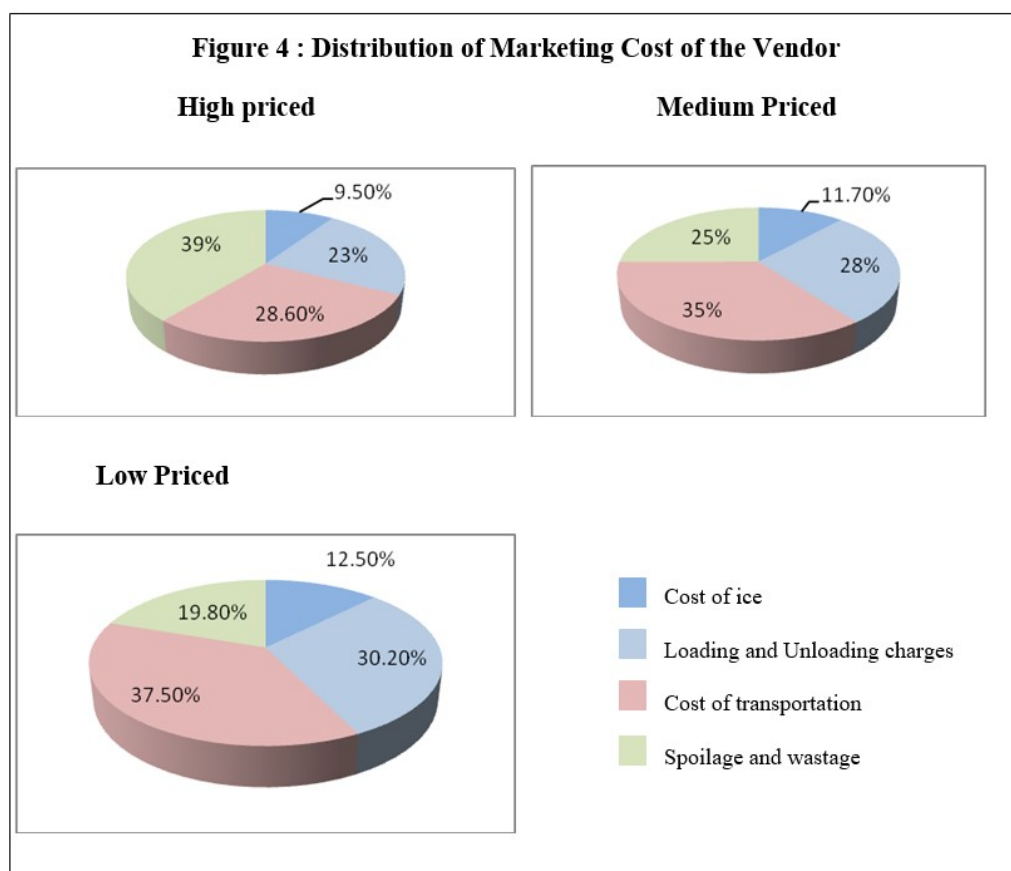
c) Marketing Cost of the vendors: Usually the vendor purchases fish either from the producer through the auctioneer or in the case of bulk landings; the fish is purchased from the retailer. The marketing cost of the vendors include the cost of ice, loading and unloading charges, transportation cost and the spoilage and wastages. The details are explained in Table 9.

Table 9 : Marketing Costs of Vendors (Rupees per kilogram)

Item	High priced category	Medium priced category	Low priced category
Cost of ice	1.2	1.2	1.2
Loading and unloading charges	2.9	2.9	2.9
Transportation charges	3.6	3.6	3.6
Spoilage and wastages	4.9	2.6	1.9
Total	12.6	10.3	9.6

Source: Researcher's calculation based on primary survey

The total marketing cost is estimated at ₹12.6 for the high priced category, ₹10.3 and ₹9.6 for the medium and low priced categories respectively. The percentages of spoilage and wastages followed by transportation and loading and unloading charges are high in all the three categories. Figure 4 clearly shows the distribution of marketing costs of retailers for the three categories.



d) Auctioneers: In the case of auctioneers, they charge a fixed amount of commission for the services rendered by them in the sales of fish. Auctioning or bargaining is the main technique of fixing the price of fish. The auctioneer stands only as an intermediary between the major components of the marketing channels. The auction charges are fixed by the auctioneer depending on the variety of fish, the demand for fish and the landings.

The Price Spread of Fish Marketed Through Different Channels

The marketing channels operating in North Kerala has been identified and now an attempt is made to analyze the price spread for fish belonging to high priced, medium priced and low priced categories.

a) Channel I: Producer – Retailer – Consumer

Table 10: Marketing Margin and Cost – Channel I

Sl. No.	Items	High Priced		Medium Priced		Low Priced	
		Amount	%	Amount	%	Amount	%
1	Net price received by the producer	160	86	64.32	76.8	17	51.2
2	Retailer's Purchase price	160	86	64.32	76.8	17	51.2
	a) Marketing cost	16.49	8.9	12.1	14.4	11.41	34.4
	b) Marketing Margin	9.51	5.1	7.38	8.8	4.79	14.4
3	Consumer's price	186	100	83.8	100	33.2	100

Source: Researcher's calculation based on primary survey

From table10, it is evident that the fisherman receives ₹160 for high priced variety, ₹64.32 for medium priced and ₹17 for the low priced varieties. The marketing margin for the 3 categories per kilogram works out to be ₹9.51, ₹7.38 and ₹4.79. The percentage share of consumer's price received by the producer is high in the case of high priced varieties.

b) Channel II: Producer – Auctioneer – Vendor – Consumer

The marketing margins and costs with reference to channel II is described in Table 11.

Table 11: Marketing Margin and Cost – Channel II

Sl. No.	Items	High Priced		Medium Priced		Low Priced	
		Amount	%	Amount	%	Amount	%
1	Net price received by the producer	160	78.5	64.32	71.5	17	47.6
2	Auctioneer's Commission	15.68	7.7	5.4	6.0	2.49	6.7

3	Vendors Purchase price	175.68	86.2	69.72	77.5	19.49	54.3
	a) Marketing cost	16.49	8.1	12.1	13.4	11.41	31.9
	b) Marketing Margin	11.4	5.6	8.2	9.1	4.8	13.4
4	Consumer's price	203.57	100	90.02	100	35.7	100

Source: Researcher's calculation based on primary survey

The percentage of commission drawn by the auctioneer is between five percent and eight percent. The commission rate amounts maximum for the high priced category. The marketing margin of the retailer amounts to ₹11.4, ₹8.2 and ₹4.8 respectively. These figures work out to 5.6 percent, 9.1 percent and 13.4 percent. After taking into account, the entire costs, the consumer's price amount to ₹203.57, ₹90.02 and ₹35.7 respectively for the purchase of one kilogram of fish in all the three categories.

c) Channel III: Producer – Retailer (at the landing centre) – Auctioneer – Vendor – Consumer

The market intermediaries in Channel III are mainly the retailer, the auctioneer and the vendor. Details of marketing margin and cost are provided in Table 12.

Table 12: Marketing Margin and Costs – Channel III

Sl. No.	Items	High Priced		Medium Priced		Low Priced	
		Amount	%	Amount	%	Amount	%
1	Net price received by the producer	160	69.7	64.32	60.28	17	31.6
2	Retailer's Purchase Price	160	69.7	64.32	60.28	17	31.6
	a) Marketing cost	16.49	7.2	8.9	8.3	14.4	26.8
	b) Marketing Margin	9.51	4.1	7.38	7	4.79	8.4
3	Auctioneer's commission	15	6.5	6	5.6	2.5	4.7
4.	Vendor's Purchase price	201	87.5	86.6	81.2	38.69	71.5
	a) Marketing cost	16.49	7.2	12.1	11.3	11.41	21.2
	b) Marketing Margin	12	5.2	8	7.5	3.6	6.8
5.	Consumer's price	229.5	100	106.7	100	53.7	100

Source: Researcher's calculation based on primary survey

Table 12 clearly shows the role played by the intermediaries. The percentage of commission drawn by the auctioneer ranges between five percent and seven percent. The marketing margin of the retailer works out to ₹9.51, ₹7.38 and ₹4.79 whereas that of the vendor works out to ₹12, ₹8 and ₹3.6. The ultimate consumer's price amounts to ₹229.5, ₹106.7 and ₹53.7 respectively for the three categories.

d) Channel IV: Producer – Auctioneer – Wholesaler – Commission agent – Retailer (at the consuming centre) – Vendor – Consumer

Let us examine the marketing margin and cost of Channel IV.

Table 13 : Marketing Margin and Cost – Channel IV

Sl. No.	Items	High Priced		Medium Priced		Low Priced	
		Amount	%	Amount	%	Amount	%
1	Net price received by the producer	160	61.2	64.32	50.4	17	23.2
2	Auctioneer's commission	15.68	6.0	5.4	4.2	2.49	3.4
3	Wholesaler's purchase price	175.68	67.2	69.72	54.6	19.49	26.6
	a) Marketing cost	13.8	5.3	13.8	10.8	13.8	18.8
	b) Marketing Margin	10.2	3.9	6.3	4.9	4.0	5.5
4	Commission agent	10.2	3.9	4.0	3.1	2.0	2.7
5	Retailer's purchase price	209.8	80.3	93.82	73.4	39.29	53.6
	a) Marketing cost	16.49	6.3	8.9	7	14.4	19.7
	b) Marketing Margin	8.2	3.1	5.3	4.2	3.2	4.4
6	Vendor's purchase price	234.5	89.7	108.1	84.6	57	77.7
	a) Marketing cost	16.49	6.3	12.1	9.5	11.41	15.6
	b) Marketing Margin	10.6	4.1	7.3	5.8	4.8	6.6
7	Consumer's price	261.6	100	127.5	100	73.21	100

Source: Researcher's calculation based on primary survey

Here seven agents play a major role in trading the fish. The net price received by the producers is ₹160, ₹64.32 and ₹17. But as it reaches the consumer through different agents, the final amount that the consumers have to pay is ₹261.6 for high priced, ₹127.5 for medium priced and ₹73.21 for low priced. The marketing margin is high for the vendor when compared to that of the wholesaler and the retailer. The commission of the middlemen ranges between 2.5 percent to 6 percent.

Producer's Share in Consumer's Price

The producer's share in consumer's price is the price received by the producer expressed as a percentage of the consumer price. The difference between the producer's price and consumer's price is considered as an indicator of marketing efficiency. The higher the price received by the fisherman, the higher the efficiency and higher the price paid

by the consumer, the lower the efficiency. It is also evident that the share of the producers inversely varies with the length of the marketing channel. Table 14 shows the share of producer's in consumer's price.

Table 14: Producer's Share in Consumer's Price

Channel	High Priced	Medium Priced	Low Priced
	Fisherman's share	Fisherman's share	Fisherman's share
I	86	76.8	51.2
II	78.5	71.5	47.6
III	69.7	60.28	31.6
IV	61.2	50.4	23.2

Source: Researcher's calculation based on primary survey

While comparing all the four channels, the producer's share is high in the case of Channel I where the number of intermediaries is less. The producer's share has been decreasing with the increase in the number of intermediaries. The producer's share is lowest in the case of channel IV where the number of intermediaries who play their role in trading the fish is very high. Thus, the hypothesis of the study stated as, with the increase in the length of marketing channel, the producer's share in consumer's rupee goes on decreasing is established. A sizeable portion is taken away by the middlemen as marketing margin and the major factors that contribute to the increase in the marketing costs are the loading and unloading charges and the spoilage and wastages.

Problems of Fisheries Sector in Kerala

In spite of its importance to the economy, there are many constraints as far as fishing is concerned in Kerala. For the sake of simplicity, the constraints faced by the fishermen were classified into different groups and the respondents were asked to rank them according to the order of their importance. The following are the groups under which constraints were classified.

Production Constraints: Important production constraints faced by the fishermen are the risk in the occupation, raising cost of materials, depletion of resources due to the use of inappropriate technology, exploitation of fishable area by outside boats, issue of technically unsuitable crafts and gears, and delay in the supply of fishing equipments by the Government. The major fishing season in Kerala is the period between November and May. Majority of the fishermen remain unemployed during the off season and this is a period of poor living situation. As fishing is a seasonal occupation, the fishermen have to adjust with the limited income earned during the main season. And at the same time fishing in the ocean is a risky occupation and so it raises the tension for fishermen and their family too. Because of these reasons young generation go in search of better job opportunities. More than 42 percent of the people ranked this as the major production constraint. Another problem is the over whelming and ever increasing cost of materials used for fishing like fuel, oil lubricants, spare parts etc. The cost of mechanized boats is so high that they are not within the reach of an average fisherman. In spite of all these, the delay in the supply of fishing equipments by the Government, force the craft owners to import them from other areas which is very costly. Even the boats issued at subsidy by the government are technically unsuitable and are not according to the imagination of fishermen. So they usually make adjustment in the structure of its construction which necessitates additional expenditure. Nearly 24 percent of the fisher folk opined this as a major production constraint. Yet another problem highlighted by 16 percent of the respondents is the encroachment of fishing boats from outside into the fishing area of Kerala. This creates new headache for the fishermen and results in the exploitation of the fishable area of Kerala. About 18 percent of the respondents opined that though technological improvement has brought about benefits to the fisheries sector, it resulted in the depletion of many resources which is a serious threat for the future generation.

Marketing Constraints: Important constraint faced by the respondents in marketing were absence of market stalls for fish, absence of institution for marketing, lack of export facilities, interference of intermediaries and the inadequacy of frozen storage facilities. 56 percent of the respondents were of the opinion that there is no organized marketing system in Kerala and this result in the sudden rise and fall of the prices of the product. Another problem was that the fishermen do not get required price because of the interference of intermediaries. Yet another aspect which deserves serious attention is the absence of permanent markets in many areas. Further, there is lack of fixed price for fish and this leads to the exploitation of consumers. Inadequate number of freezing plant is yet another major constraint. The frozen storage facility is a crying need in the state and shall have significant socio-economic benefits.

Infrastructural Constraint : The major infrastructural constraints can be listed as lack of proper communication facility with the island while fishing, inadequate maintenance yards for crafts and gears, lack of launching and landing facilities for crafts and gears in many areas, lack of processing factories and inadequate training for fishermen by the Fisheries Department. With the increase in the number of fishing boats, the maintenance and service facilities are also to be improved. But these facilities provided by the Government are quite inadequate. The lack of proper communication facilities creates great headache for the fishermen. Though the inadequacy of cold storage has been counted as a marketing constraint, it is a major constraint for infrastructural development also. Inadequate training for fisherman by the Fisheries Department is yet another problem of fisheries sector. Finally, the capability of the Fisheries Department with regard to the collection of reliable and timely data and statistics on all aspects of fisheries which are essential for planning, implementation and subsequent monitoring of fishery management and development of this sector is lacking.

Social Constraints: Together with all these constraints, certain social constraints are pointed out by the fishermen. Disposal of wastes and cleanliness of the fish markets are the other aspects which deserves immediate action. At present, head, bones, fins etc. of the fish are discarded on the beach sides which get decayed and act as breeding sites of house flies and cause health hazards during the fishing season.

Remedial Measures: Fisheries development plans in the developing countries should take account of the infrastructure, technology and human resources in addition to harvesting, processing, marketing, servicing and material supply to enable better exploitation of their fishery resources to increase the value added to economy, and to provide better employment opportunities together with the preservation of the resources for the future generation. The remedial measures were grouped under the following heads.

1. Suggestions for enhancement of fish catch: Most of the sample fishermen desire that Government should provide all kinds of security to them. As far as the non-availability and rising cost of materials like wood, spare parts etc., a scheme for making them locally available through Fisheries Development Agencies as is done in the case of diesel and increasing the rate of subsidy will be an incentive for the small scale fishermen. Similarly the design of the subsidized fishing boats should be such that it is according to the imagination of fishermen, so as to reduce the additional expense of restructuring the design. Inappropriate gears which results in environmental degradation should be banned. Another suggestion is that the Government should seriously warn the other States and foreign trawlers to prevent the encroachment of their fishing boats into the fishing area of Kerala.
2. Suggestions for improving marketing efficiency: As there is no institution for marketing, the major role is played by the middlemen. So it is desirable that either Government or an authorized society should collect the products from the producers and distribute it so that it will reduce the interference of intermediaries also. The lack of a fish market place permanently in localities creates many difficulties for consumers as well as for fishermen in transaction. So certain places should be demarcated for fish marketing in all the areas. The Government should take initiative for setting up of more freezing plants in main areas and for the introduction of more number of vessels having frozen storage facilities so that it will increase the scope for preserving the fish and thus lessen the percentage of fish decaying.
3. Suggestions for improving infrastructural facilities: The increase in the number of fishing boats necessitates improvement in the maintenance and service facilities. This can be solved by starting of more maintenance yards for crafts. The fishermen desires to have mobile workshop, as this will reduce the risk involved during sailing. It is desirable to establish processing factories in more areas so as to enable the population to increase the quantity of processed products and thereby earn more export value. Another main suggestion put forth by the respondents is increased Government support mainly in terms of financial assistance.
4. Suggestions for the eradication of social constraints: The problem of disposal of wastes can be solved by an effective small scale wastes utilization method of converting them to fish meal in all the coastal areas, since the product can be used as excellent manure.

Conclusion

Technological advancement indirectly affects the fish marketing system. In Kerala advancement of technology has brought about changes in the production side which in turn led to the changes in the marketing system. Introduction of new technologies led to the increase in the catch which attracted big business entrepreneurs and the emergence of middlemen. In this chapter, from identifying the market channels, it is evident that the role of intermediaries in fish trading is prominent in Kerala. The fishermen are able to get only a lower percentage of the final price of fish with the increase in the length of marketing channel; the producer's share in consumer's rupee goes on decreasing. A sizeable fraction is taken away by the middlemen as marketing margin. When a market is able to protect the interests of both the producers and consumers, then that market can be described as an efficient marketing system. So, the role of intermediaries should be reduced to have an efficient marketing system. The Government should take initiative to encourage the fishermen to conduct the marketing activities through efficient Co-operative system and reduce the role played by the intermediaries. Similarly the infrastructural facilities had to be improved for a better functioning of the marketing of fish which is totally perishable in nature.

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