

MARINE FISH MARKETING TREND IN KERALA*

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ABSTRACT

The paper deals with the fish marketing system prevailing in Kerala, the price structure, seasonal and spatial price variations, marketing margins of commercially important varieties of fish and the share of fishermen as well as middlemen in consumer's rupee.

Data on fish prices at the primary market (landing centre), wholesale and consumer markets have been collected by direct observation at the time of actual transaction and the informations on transportation and handling charges and other marketing aspects have been collected from the middlemen involved at different stages of marketing during the period 1984-86 covering pre-monsoon, monsoon and post-monsoon seasons. The landing-wholesale-retail price relationship has also been studied.

The study revealed that due to lack of infrastructure facilities the supply of fish at the landing centre is highly inelastic which often would be resulted in disposal of fish at throw-away prices at the time of heavy landings. The involvement of a number of middlemen in the marketing chain adversely affects the interest of both fishermen and consumer. Fishermen's share in consumer's rupee varied from an average of about 40% for cheaper varieties of fish to about 65% for high priced varieties. There has been a considerable increase in the marketing expenditure over the recent years.

INTRODUCTION

THOUGH the fish marketing system in Kerala has been slowly transforming from a primitive to modern stage with the increased facilities in transportation, communication and to a lesser extent storage and processing facilities, it can be fully developed for catering the needs of the all out effort for developing both capture and culture fisheries, only through the formulation of a proper fish marketing policy. On the one hand the phenomenal glut in the catch of some or other species and the consequent drastic fall in prices is still continuing at many small landing centres. On the other hand there has been a continuous increase in fish prices during recent years mainly due to

increasing demand as against more or less a stagnant annual production. At most of the major landing centres now there is no 'trash fish'. A number of species which were not allowed to enter into the market channel in earlier years have already entered in the commercial list. For example fresh shark, thread-fin bream, carangids, tuna, etc. have been widely consumed in Kerala only in recent years. Even *Squilla* which used to be thrown away from the boat, has been now sold at a reasonable price. So also cuttlefish which used to be ignored by the consumers and hence discarded by our fishermen has suddenly become highly favourable to fishermen due to its good export demand. The continuous increase in fish prices (without any considerable reduction in catch level) indicates that there has been a definite increase in the demand for fish. In spite of all these, a bumper catch

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during a particular season never helps the fishermen to get a higher income and a very low catch is against the interest of both consumers and producers. Such chronic problems inherent in our fish marketing system could be solved through the formulation of a marketing policy based on the proper understanding of the prevailing marketing structure and its various complicated facets. The studies in the trends of fish marketing even at micro level, essentially help formulation and adaptation of such a marketing policy.

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DATA BASE AND LOCATION

Data on prices of selected varieties have been collected at three stages *viz.* producing centre (Cochin Fisheries Harbour), wholesale markets (Ettumanoor and Perumbavoor) and consumer markets (Ernakulam fish market, Kadavanthara fish market, Perumbavoor, Pala and Mundakayam). For each variety of fish the data on marketing costs incurred by different categories of intermediaries involved at different levels of marketing channels were collected. The study was conducted from 1984 to 1986 covering all quarters in each year.

Cochin Fisheries Harbour is a major landing centre along Kerala Coast and it is a primary market for the fish landed at this harbour. The total fish landings at CFH was estimated at about 33,000 tonnes in 1984, 21,000 tonnes in 1985 and 26,000 tonnes in 1986. In a day on an average about 75 trucks, 60 tempos 100 autovans, 200 cycles arrive at CFH for the transportation of fish to different markets. The maximum number of arrivals is during September-November and minimum during March-May season. About 50 to 60 auctioneers

70 to 80 traders and 300 labourers are engaged in activities connected with fish marketing. About 300 tonnes of ice is used every fishing day at this harbour. The method of disposal is by auction. As soon as the boats reach the harbour the catch is handed over to the auctioneer and it is his responsibility to auction the fish and make payments to the boat owner. He gets a commission usually about 5% for his service. Some auctioneers advance loans to boat owners to get the right of auctioning and if the loan is comparatively bigger amount he gets a higher commission of about 10%. The packing is done in bamboo baskets by putting fish and ice almost in equal proportion in alternate layers. Then the packed baskets will be loaded in the trucks or tempos to carry to distant markets. Autovans are mostly used for transportation to near markets and cycles for street vending or house to house selling.

MARKETING CHANNELS

Regarding fish marketing the following channels are usually followed (i) Producer-retailer-consumer, (ii) Producer-wholesaler-retailer-consumer, (iii) Producer-commission agent (or broker)-wholesaler-retailer-consumer, (iv) Producer-wholesaler-commission agent-retailer-consumer and (v) Producer-commission agent-wholesaler-commission agent-retailer-consumer.

In the first channel cycle vendors or head load vendors purchase fish directly from the landing centre (producer) and sell to consumer either at a market place or at door step of houses and hotels. In all other channels wholesalers are also involved. In some cases commission agents are involved either at landing centre or at the consumer markets and sometimes at both centres. Usually commission agents are engaged by wholesalers to purchase as well as dispose the consignments. These agents get certain percentage of the fish value (usually 5 to 10%) from the wholesaler. They usually do not take the ownership of the

lots. However some of the commission agents made some investments to bridge the time gap between payments by retailers to wholesalers. In fish marketing the transaction is mostly done on credit basis. At consumer market wholesalers usually hand over the truck load of fish to commission agent and the retailers purchase fish from this agent. The retailers make the payments after one or two days and at certain places after one week. Depending upon the personal relationship between agent and retailer those payments will be sometimes delayed. But the agent has to make payments to wholesaler within the allowed time period. In such circumstances the agent has to pay from his own pocket. For this type of investment the agent gets a margin from the retailer in addition to his commission from wholesaler which usually reflects in the retail price.

Perumbavoor, Alwaye, Angamali, Trichur, Kunnankulam, Chavakkadu, Pattambi-Ponnani, Tirur, Kozhikode, Tellicherry, Ettumanoor, Mundakayam, Kottayam, Changanacherry, Quilon, Trivandrum, etc. are some of the major wholesale markets where the truck loads of fish regularly go from CFH. Of these Perumbavoor and Ettumanoor are the major assembling centres within 70 kms from CFH. These two markets have been selected to collect data on wholesale prices, transportation cost from CFH and other marketing expenditure.

The truck loads from CFH arrive at Perumbavoor market in the night and transaction takes place at midnight and at Ettumanoor at 3 to 4 A.M. The load is disposed by auction. There are professional brokers who are responsible for bidding and making payments for which they get 8% of the sales value from the wholesalers. The purchases are mostly either by retailers who take the fish to interior markets by truck loads engaged by a group of them or by cycle vendors from different villages mostly within a distance of 30kms.

Among the retail markets selected for the study Ernakulam fish market and Kadavanthara are in Cochin city area within 15 kms from the CFH. Fish is transported to these markets from the CFH mostly by autovans by retailers themselves.

PRICE BEHAVIOUR

The price behaviour of fish is mainly characterised by wide fluctuations at all stages of transactions in the marketing chain, which is resulted from the highly perishable nature of fish and the high variation in its short run supply. Price is determined by the interaction of demand and supply at both producing centres (Primary markets) and consumer markets. At landing centres (Primary markets) the market demand is the aggregate demand from wholesalers which is indicated by the number of trucks arrived at the centre and also from cycle vendors, retailers and individual purchasers. There will not be much variation in the day to day volume of transactions by these purchasers or in other words the short run demand is more or less stable. However the level of supply on any day is completely unpredictable and short run supply is highly inelastic. Hence on any day a bumper catch at a landing centre will slash down the fish prices and a small catch will boost the prices to very high levels. This explains the wide day to day fluctuations in fish prices. For any commodity price stability is a major factor which induces the producer to increase the level of production. Though the short term fluctuation in fish price is very wide the average annual prices of all commercially important fishes during the years 1984 to 86 showed a continuously increasing trend. During this period wholesale price of oilsardine at Perumbavoor market, increased by 45%. The percentage increase was more for comparatively cheaper fishes like carangids (69%), oilsardine (45%), whitebaits (40%), catfish (40%) and lower for high priced fishes like seerfish (29%),

pomfret (24%), perches (15%). The increase was comparatively low for barracuda, shark, threadfin bream, mackerel and tuna. This may be due to the higher increase in prices of these fishes in 2 to 3 years earlier to 1985 and further increase would have reduced the demand for some of these fishes and with the exception of mackerel in this group, have picked up consumer preference and considerable demand only in recent years. At Ettumanoor the trend is maintained for most of the fishes, but the rise in prices is not so high as at Perumbavoor which could be attributed to higher levels of market arrivals at Ettumanoor from Quilon and Alleppey regions (Table 1 and 2).

TABLE 1. Average annual landing centre prices (Rs) for selected fishes at Cochin Fisheries Harbour during 1984, 1985 and 1986

	1984	1985	1986
Oilsardine ..	1.15	1.75	2.00
Tuna ..	2.75	3.00	3.50
Shark ..	3.25	3.50	3.80
Whitebaits ..	1.45	1.75	1.80
Threadfin breams ..	2.75	3.00	3.00
Barracuda ..	3.75	4.00	4.20
Carangids ..	2.75	3.25	3.30
Lizardfish ..	2.00	2.20	2.65
Perches ..	5.00	5.75	6.80
Mackerel ..	3.75	4.25	5.10
Pomfret ..	10.10	12.25	13.00
Seerfish ..	11.20	13.50	14.70
Catfish ..	2.25	2.75	3.00

TABLE 2. Annual average wholesale price (Rs.) at Ettumanoor and retail price at Palai during 1984, 1985 and 1986

Fish	Ettumanoor			Palai		
	1984	1985	1986	1984	1985	1986
Oilsardine ..	2.10	2.25	2.75	3.10	3.80	4.10
Tuna ..	3.40	4.00	4.20	4.50	4.80	5.50
Shark ..	5.00	5.25	5.60	6.75	7.15	7.65
Whitebaits ..	2.25	3.00	3.00	3.00	4.00	4.50
Threadfin breams ..	3.25	3.40	3.75	5.00	5.25	5.25
Barracuda ..	5.00	5.50	6.00	6.25	6.80	7.25
Carangids ..	3.50	4.40	5.25	5.00	5.00	6.00
Lizard fish ..	3.00	3.50	3.50	4.45	4.85	5.00
Perches ..	7.00	7.20	8.50	8.50	8.65	8.80
Mackerel ..	5.00	6.25	6.38	8.00	8.50	8.80
Pomfret ..	13.00	14.25	15.00	16	17.65	18.00
Seerfish ..	14.00	17.00	18.00	17.00	18.50	22.00
Catfish ..	3.40	3.80	4.50	5.25	5.30	6.00

The percentage rise in retail prices of most of the fishes at Palai and Mundakayam was not so pronounced as in wholesale prices. At Palai retail market, truck loads are mostly arrived from Ettumanoor and at Mundakayam arrivals are mostly from Perumbavoor, Ettumanoor and Cochin. The price of whitebaits showed an increase of 50% and oilsardine 32% from 1984 to 86 at Palai market and the

increase was moderate for threadfin breams (5%), mackerel (10%) lizardfish (12%) and perches (12%). At Mundakayam market during this period the maximum increase was for seerfish (41%) followed by oilsardine (38%) mackerel (27%) and carangids (26%). There was much difference in the trend in retail prices of different fishes at Palai and Mundakayam even though the distance from the major

producing centre (CFH) to these markets is almost the same. This could be attributed to the variation in market arrivals of different fishes to these markets.

The percentage increase of prices from 1984 to 86 at Cochin Fisheries Harbour was maximum (74%) for oilsardine followed by perches (36%), mackerel (36%), catfish and lizard fish (33%), seerfish (31%) and pomfret (29%). The substantial increase in the prices of these varieties at the producing centre, though due to the interaction of a number of factors, may mainly be due to the sustained demand for these fishes in almost all parts of Kerala and neighbouring States, unlike some other varieties which do not have consumer preference in certain regions (Table 2).

Regarding the fish price behaviour during 1984 to 1986 the most important phenomenon is that there was an increase in the annual average prices of all major species at levels of marketing, be it at producing centre, wholesale market or consumer market. However, day-to-day fluctuation is very high as compared to agricultural crops where there is no considerable variation in daily or monthly production as in the case of fish. Even the price of some of the varieties during the peak season in 1986 due to abundance of its catch was less than that of 1985. However, average annual price never showed a decline during this period.

Marketing margin or the price spread is the difference between the price paid by the consumer and the price received by the producer. For fish it is the differential between the landing centre price and the retail price at the terminal market. Usually the components of marketing margin are the costs of all marketing services which include packing, handling, transportation and the margins of the middlemen. If the fish has undergone any sort of processing, its costs also will be included in marketing margins. However, for this study only the marketing of fresh fish is included.

Marketing margins of 13 commercially important fishes have been estimated at different fish markets such as Ernakulam fish market within 15 kms from CFH, Perumbavoor 60 kms, Mundakkayam 100 kms, Palai 85 kms from the Cochin landing centre. A higher level of marketing margin without any value added processing indicates the inefficiency of the marketing system. Even in consumer markets situated at varied distances from the producing centre under an efficient marketing system price variation will be only proportional to the transportation cost. At Ernakulam fish market, marketing margins of most of the fishes were low not only because of the less transportation cost, but also of the absence of wholesalers and brokers in between the producer and the retailer. The retailers of the nearby fish markets purchase fish directly from the CFH and bring the fish to retail markets mostly by auto vans and it is beneficial more to consumer than to producer.

For oilsardine, marketing margin at Ernakulam fish market was 38% of the consumer price in 1986 and at Perumbavoor it was 43% and at Mundakkayam and Palai more distantly situated markets it was 47 and 51% respectively. The highest level of marketing margin was for whitebaits (60%) at Palai market. The average marketing margin of 5 low priced fishes such as oilsardine, whitebaits, carangids catfish and lizardfish was 50% and the average of the five quality fishes such as seerfish, pomfret, mackerel, perches and shark was only 40%. The marketing margins at Mudakkayam also showed almost the same trend as the distance from CFH of these two markets (Palai and Mudakkayam) are situated in almost the same distance from CFH).

At Perumbavoor retail markets, marketing margins of most of the species were lower than Mundakkayam and Palai as Perumbavoor is nearer to CFH and the wholesale and retail markets located at the same place. More over

market arrivals to Perumbavoor retail market is much higher than to other two markets

Components of marketing margin

The average landing centre (CFH) price of one kg of mackerel, the costs involved at different stages of marketing channel from CFH to Palai retail market through Ettumanoor wholesale market, the wholesale price at Ettumanoor and retail price at Palai during 1986 are given below.

	Rs.	P.
Average price received by the fishermen at CFH for one kg of mackerel ..	5.10	
Cost of packing materials (Basket, coconut leaves and coir) ..	0.28	
" " Cost of ice ..	0.38	
" " labour charge ..	0.20	
Transportation cost from Cochin to Ettumanoor wholesale market ..	0.20	
Commission for broker at Ettumanoor wholesale market ..	0.25	
Marketing costs incurred by the wholesaler (sum of 2 to 6) ..	1.31	
Price received by the wholesaler at Ettumanoor market ..	7.00	
Wholesaler's margin (8-1-7) ..	0.59	
Cost incurred by the retailers to transport fish from Ettumanoor to Palai ..	0.50	
Other expenditure incurred by retailer ..	0.50	
Marketing costs incurred by the retailer (10+11) ..	1.00	
Price received by retailer for price paid by the consumer at Palai market ..	8.80	
Retailer's margin (13-8-12) ..	0.80	
Total marketing costs (7+12-6)	2.06	

Share of fishermen, middlemen and marketing expenses in consumer's rupee for mackerel at Palai market

	Rs/kg	As per cent to RP
Price at CFH ..	5.10	58
Marketing costs ..	2.06	24
Wholesaler's margin	0.59	7
Retailer's margin ..	0.80	9
Commission for middlemen ..	0.25	2
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Retail price of mackerel at Palai market	8.80	

A similar study conducted in 1981-82 at Sakthikulangara landing centre in Kerala showed that the marketing cost of different fishes sold at distant markets (about 100 kms away from landing centre) varied only from 6 to 7% whereas it increased about 20 to 25% in 1986.

So also the fisherman's share in consumer's rupee was lowest 40% at Palai for whitebait and at this market the only other fish for which fishermen's share was less than 50% was oil-sardine (49%). But in the earlier study fishermen's share in consumer's rupee for lizardfish at Punalur market and threadfin bream at Kottarakkara market was only 31% as against 53 and 57% respectively for these fishes in 1986. However from 1984-86 there was not significant variation in the share of fishermen in consumer's rupee, though there was marginal increase in marketing costs. It is found that the increase in marketing costs as compared to 1981 has not reduced the share of fishermen in consumer's rupee, but the middlemen's margin have been adversely affected by the increased marketing costs. However, because of the better transportation facilities and better demand for fish in interior markets the volume of transaction by the wholesaler,

on an average, showed a considerable increase during recent years. During 1981-82 most of traders used to transact only 1 to 2 tonnes or to the maximum of 4 tonnes. Now most of the trucks carry 5 to 10 tonnes so that even at a low percentage of their margin they could earn a higher profit and the reduction in margin as percentage of retail price does not mean that the profit of the wholesalers or retailers has been reduced. (Table 3).

TABLE 3. Fishermen's share (in Ps) in consumer's rupee at selected retail markets in 1986

Fish	Ernakulam	Perumbavoor	Mundakkayam	Palai
Oilsardine ..	62	57	53	49
Tuna ..	70	58	56	54
Shark ..	68	55	51	50
Whitebaits ..	52	45	45	40
Threadfin breams	61	60	51	57
Barracuda ..	66	60	52	5
Carangids ..	70	63	52	5
Lizard fish ..	71	62	60	5
Perches ..	68	67	64	6
Mackerel ..	68	64	63	5
Catfish ..	65	50	54	5
Pomfret ..	72	66	61	67
Seerfish ..	69	67	58	61

Inter dependence of landing centre and retail prices

The functional relationship between the landing centre price and retail price at two markets in Cochin City having estimated for selected fishes by linear regression analysis taking landing centre price as independent variable and retail price as dependent variable. It is assumed that the retail price is dependent on the landing centre price in the short run. The data used was daily prices for covering all seasons in 1985-86. The estimated equations have been given below.

Mackerel

$$Y=2.27+1.16X..(EFM) \quad r=0.96$$

$$Y=2.92+1.15X..(KFM) \quad r=0.97$$

Catfish

$$Y=0.25+1.48X..(EFM) \quad r=0.86$$

$$Y=0.002+1.74X..(KFM) \quad r=0.91$$

Oilsardine

$$Y=2.147+0.5206X..(EFM) \quad r=0.48$$

$$Y=2.1831+0.5201X..(KFM) \quad r=0.49$$

Pomfret

$$Y=0.71+1.29X..(EFM) \quad r=0.95$$

$$Y=1.56+1.36X..(KFM) \quad r=0.94$$

Seerfish

$$Y=1.4095+1.3291X(EFM) \quad r=0.916$$

Where Y=retail price

X=landing centre price

r=correlation coefficient

EFM—Ernakulam fish market

KFM—Kadavanthara fish market

All the coefficients have been tested and found significant at 5% level.

The rate of change in retail prices of seerfish, mackerel, pomfret and catfish with respect to landing centre prices is more than one and for oilsardine it is less than one. Among the above species other than oilsardine landing centre prices and retail prices are highly correlated. The retail prices of these species at both Ernakulam and Kadavanthara markets in Cochin city are also found to be highly correlated (seerfish $r=0.83$) which indicates high degree of market integration.

CONCLUSION

Over the recent years fish marketing in Kerala has been transforming to a modern stage despite the infrastructure constraints and inherent complications in the marketing system. The role of the middle men in the fish marketing

system is continuing unabated due to the absence of institutional involvement. Nevertheless it has been observed that the share of middlemen in consumer's rupee has been coming down. The marketing costs over the recent years showed an increase mainly because of the increased cost of packing materials, transportation and the labour charges for packing loading and unloading the fish. Packing also has been much improved by using adequate quantity of ice and packing materials so that the fish can be delivered to consumers in distant markets in a better condition. The reduction in the middlemen's share in consumer's rupee indicates that the benefit of increase in price has not been fully gone to the middlemen, a portion of which has been utilised for better packing and hence to preserve the quality of fish. Fishermen also have been benefitted out of this because their share in consumer's rupee has also been increased for many of the commercially important species.

In spite of the seasonal and daily variations in fish prices at different landing centres depending upon the volume of catch landed, the average annual prices for almost all fishes showed a continuous increase from 1984 to 1986.

Out of 13 varieties of fish for which marketing margins and fishermen's share in consumer's rupee have been worked out, the average share of the fishermen for the 5 low priced fishes was 50% in 1986, 50% in 1985 and 45% in 1984 in Palai market. However the trend in the average is not reflected for all fishes in this group. For example for whitebaits it was 48% in 1984 and reduced to 40% in 1986. So

also the average share of fishermen for high priced varieties in 1986 was about 60%.

The fishermen's share on an average showed an increase over the years from 1981 to 1986. However during the present study (1984-86) the increase was only marginal and that too not for all fishes.

The landing centre prices and retail prices were highly correlated for most of the fishes. Even the retail prices of those varieties for which there is strong consumer preference were highly correlated in retail markets situated within the city and in distant markets within the same distance from the landing centre, the degree of market integration was much less due to regional preferences for certain varieties and market arrivals from different landing centres.

The present marketing system and price structure do not provide any inducement to the fishermen to increase the fish production. Even the occasional bumper catch do not help the fishermen to increase his fishing income. This can be rectified only through government interference by announcing a support price for those varieties which used to be caught in large quantity now and then. The support price can effectively be implemented only when there is a public agency to purchase fish at the level of support price whenever there is a glut in the market. Such an agency should be provided with storage processing and distribution facilities. Already in Kerala Matsyafed is functioning in this line, but not so effectively to solve the problem of glut in the primary markets especially at small landing centres.