

Economic perspective of trader's discounts and other reductions in marine fish marketing in Kerala

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In the traditional fish marketing system, fish was sold by the fisher-women who carried the fish to rural markets or to individual households. There was little role for the intermediaries and the entire

margins realized went to the fishermen households. The technological transformation in the marine fishing sector resulted in large scale increase in trade volume and improvements in fish marketing

Table 1. Discounts and marketing costs in major harbours Landing Centre in Ernakulam District

Particulars	Cochin Fisheries Harbour	Munambam Fisheries Harbour	Kalamukku Landing Centre
Discounts for fishes	10-15%	10-15%	10-15%
Discounts for shrimps and cephalopods	12.5 %	12.5 %	12.5 %
Auction charges	5%	5%	7%
Marketing costs			
Unloading fish from boats	₹ 2000/ ₹ 1 lakh of fish	₹ 1500/ boat	₹ 1000/ boat
Ice cost for shrimps and cuttlefishes	₹ 37.5/box	₹ 40/box	₹ 30/ box
Ice cost for fishes	₹ 35/ box	₹ 35/ box	₹ 35/ box
Weighing, packing and icing(fishes)	₹ 53/ box	₹ 58/ box	₹ 15/ box
Weighing, packing and icing (shrimps and cuttle fishes)	₹ 1.95/kg	₹ 1.85/kg	₹ 0.75/kg
Total marketing cost (₹ per kg of fish)	5.00	4.00	3.00
Total marketing cost (₹ per kg of shrimps and cuttlefishes)	6.00	4.5	3.5

system with the involvement of several intermediaries to perform the different marketing functions. This necessitated huge amounts of money for initial payments for fishing as well as fish marketing activities. As both the fishermen and traders depended on private money lenders for meeting their financial needs, these intermediaries decided the prices at the harbours and could exert complete control over the trade. The prices at the landing centres were usually decided by the cartels formed by the traders and commission agents and the fishermen were prone to exploitation in terms of discounts and other kinds of reductions at the harbours.

The practice of deducting nearly 10-15 % of the actual auction amount as trader's discount (*Lelakkizhivu*) was existing in the harbours and fish landing centres in Kerala since the last 25 years with the proliferation of mechanized fishing. The discounts were charged in order to adjust for the discrepancies in weights as prices were fixed based on eye observation during auctioning. The traders and commission agents in Ernakulam district demanded a hike in the trader's discounts to 20 % and the fishermen were reluctant to pay this amount. The agents withdrew from auctions in the harbours which led to drastic decline in fish prices for few days in the post monsoon season of 2013.

Table 2. Average landing centre and retail prices of fishes / shrimps in Ernakulam in the post- monsoon season (2013)

Name of fish	Landing centre price(₹/kg)	Actual price received by fishermen (₹/ kg)	Retail price (₹/kg)	Fishermen' share in consumer's rupee (%)
Ribbon fishes	160	128	220	58.18
Cuttle fishes	200	165	280	58.93
Squid	300	247	340	72.79
Shrimps (<i>P. indicus</i>)	320	264	380	69.47
Shrimps (<i>M. dobsoni</i>)	160	132	220	60.00
Mackerels	100	80	160	50.00
Scads (small)	120	96	200	48.00
Seer fish (medium)	440	352	560	62.86
Pomfrets-black (medium)	300	240	400	60.00
Pomfrets-white (medium)	280	224	380	58.95
Oil sardine	60	48	100	48.00

Table 3. The income earned by women collecting fish in Punnappara landing centre

Age group (years)	Number of women	Quantity collected kg/fishing unit				Average income earned (₹/day)/day	
		Peak Season		Lean season		Peak season	Lean season
		Shrimps	Fish	Shrimps	Fish		
5-10	15	2	5	0.5	2	530	185
11-20	10	2.5	7	0.5	4	705	285
21-50	70	3	8	0.5	5	820	335
>51	25	3.5	10	0.5	5	975	335

The agitations by the fishermen unions led to discussions with different stake holders including Government officials, commission agents, traders and representatives boat owners and other fishermen. The fishermen demanded for fixing a standard procedure of fish trade based on weight, but no fruitful decisions were arrived at could be. In this context, an economic perspective of the different forms of discounts and reductions at different harbours in Kerala and their likely impact on the fish prices and fishermen's share in consumer prices are analysed.

The marketing margins consisting of trader's discounts and auction charges varied from 17.5% for shrimps to 20% for fishes in different harbours. For export oriented items such as shrimps and cephalopods, the discount at the harbor was 12.5% of the actual auction rate for delayed payments and 13% in the case of immediate payment. For fishes, the discount ranged from 10 to 15% depending on the time of payment. The marketing costs at the harbour included ice and labour costs. The labour costs for loading, unloading, icing and packing varied in different harbours. For shrimps and cephalopods the rate was fixed per kg whereas for finfishes the rate was fixed per box of fish handled. The average marketing cost per kg of fish ranged from ₹ 3.00 to 5.00/kg and that of shrimps from ₹ 3.5 to 6.00/kg in different harbours.

The retail price of export oriented items such as shrimps and cephalopods did not show much increase in the retail markets of Kerala and the fishermen received better share for these items. Among the fish items, the fishermen received better share for seer fishes (62.86%) while it ranged

between 48 to 68% for other fish items. In the absence of traders discounts, the fisherman's share in consumer's rupee will increase by 15% at the harbours.

Types of discounts in the traditional fish landing centers in Alappuzha

In addition to trader's discounts, several other forms of reductions are prevailing in the traditional fish landing centres Kerala. The traditional fishermen were forced to give few baskets of fish free of cost after auctioning on the grounds of compensation for traders in the event of any distress sales or difficulties in disposing the fish. In addition, fishes were given free of cost to the local people, poor or family members who approach the landed boat. This was according to the traditional belief of getting better catches if fishes were donated to people in the locality. In the traditional fish landing centers in Alleppey, fisherwomen and other poor people in the locality received fish free of cost from the landed canoes. In the absence of local people to collect fish from boats, women from Cuddalore, Tamil Nadu have started begging fish from the landed fishing units since past 10 years. Whose spouses reached Alappuzha as migrant labourers. In addition to collecting fish from boats, they do sorting of fish also. Nearly 100 women along with kids were engaged in collecting fish from the canoes and selling it. They approach each boat with small baskets and the collected fish is pooled, sorted and sold at the landing centre. In addition to this, they did sorting of mixed basket of fishes for which also they received small amounts of fish as payment.

The peak season in Punnappara landing centre was during June - September and the lean season was

during January - March. The average income earned per day by the women collecting fish in Punnapra landing centre varied from ₹ 530 to ₹ 975 during peak season and ₹ 185 to ₹ 335 per day in lean season. They reached the fish landing centres at around 6 am and work up to noon and the working hours may extend up to 6 pm during the peak fishing seasons. Women and children belonging to the age groups of 5 - 50 years and even more were engaged in this activity. They were able to collect 2-3.5 kg of shrimps and 5-10 kg of fish from a single boat during peak season and 0.5 kg of shrimp and 2-5 kg of fish during lean season.

Even though the intermediaries facilitate the smooth functioning of the marine fish trade in the state, the huge margins charged by them and

unscrupulous practices such as discounts and other forms of reductions have resulted in low profits realized by the fishermen. On the other hand, the consumers are forced to pay high prices for majority of fishes in the state owing to huge demand both from domestic and export sectors. The transformation of the marine fishing sector to multibillion dollar business necessitated huge investments in both in the harvest and post-harvest sectors. Lack of sufficient financial resources available with the fishermen and traders enable the intermediaries to exert control over the trade. Institutional finance for fish trade and market intervention by forming fisher cooperatives is essential for protecting the interests of both fishermen and consumers.

Scope for mechanized fishing of teleosts with light attraction in Southeastern Arabian Sea

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The sense of vision coupled with powers of chemoreception is used by many fishes to orient and perform activities such as foraging, breeding and avoiding predators. In such cases their behaviour is affected by light stimuli, natural or artificial. These responses include changes in schooling behaviour, spatial distribution, migration, reproduction etc.

In fishing, artificial lights are often used to find or lure fish which are then harvested with encircling nets or other gears. In India light fishing is not widely practiced except for Chinese dipnet fishing in backwaters of Kerala.

Under an NAIP funded project on oceanic squids CMFRI conducted an extensive study for the exploration of resources purple back flying squid *Sthenoteuthis oualaniensis* in the Arabian Sea using a trawl converted for squid jigging using light attraction. The vessel operated bright overhead

lights (18 metal halide lamps, 1.5 kW each) at night, for attracting and aggregating squids near the vessel and it was observed that besides squids a number of marine fishes were also attracted to the light. Major groups of fishes thus attracted were halfbeaks, sardines, anchovies, mackerel, horse mackerel, scads, dolphin fish and tunas.

Oceanic fish aggregation using lights

During August 2009 to April 2013 Hooks and lines operation was carried out in the squid fishing ground (8°N to 17°N lat 64°E to 76°E long) at night after 2 to 5 h of illumination. Six to eight numbers of hooks (#8,10) were tied alternately on a Polyamide monofilament line (50 m length and 0.8 mm thickness) and used for tuna and other pelagics. Sharks were caught by # 1-01 hooks with 1 mm thickness line of 50 m length.

Hook and line operations conducted in the squid jigging grounds in Arabian Sea, contributed a total