



Marketing channel and value chain analysis of Bombay duck and ribbon fish in Cox's Bazar area of Bangladesh

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Abstract

A study was conducted to investigate marketing channel and value chain of two commercially important marine fish species in Cox's Bazar area, Bangladesh, namely, Bombay duck *Harpodon nehereus* and Ribbon fish, *Trichiurus haumela*. Three types of markets were found in the study namely primary, secondary and retail markets. The number of sample fishermen and intermediaries were 120. About 4 to 5 intermediaries were found to be involved in the each marketing chain and this group is believed to make huge profit, thus the prices of fishes were very high in the final consumer market. Marketing margin for fresh Bombay duck and ribbon fish were 29% and 28% and dried Bombay duck and dried ribbon fish were 35% and 19% of consumer purchase price, respectively. Poor transport facilities and huge number of intermediaries in the marketing channels were the main problems of marine fish marketing channel. Government intervention in the marketing channel is necessary for sustainable fish marketing systems.

Key words: Pesticide, sumithion, zebrafish, gonad, hemoglobin, blood glucose

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Introduction

A large amount of marine fishes are caught by the fishermen in the Cox's Bazar area, Bangladesh. Among the catches of these marine fishes Bombay duck and ribbon fish are important, especially for their dried items. These fishes are transported to different parts of the country through marketing channels. Consumers have to depend on an effective fish marketing system through which fishes will be available within a short period in fresh state. The marine fish marketing system is traditional, complex and less competitive but plays a vital role in connecting the fishermen and consumers, thus contributing significantly in the 'value adding' process (Chowdhury, 2004). The most serious marketing difficulties seem to occur in remote communities with lack of ice and poor road facilities, and the farmers are in particularly weak position in

relation to intermediaries (DFID, 1997). Due to involvement of middlemen in the marketing channel, the price of fishes at the catching area is low but at the consumers area is high; sometimes it goes double at consumer level from the fishermen (World Bank, 1991). In the supply chain analysis the number of intermediaries and stakeholders were found to vary depending on the extent of market; the supply chain was too short for localized market (Munir *et al.*, 2006). Marketing system varies from area to area and with the time. Fish prices increase due to the middlemen in the marketing sector, as they have established marketing chain based on the exploitation of the fishing communities by setting up an artificial pricing chain through intermediaries at different levels (Kleih *et al.*, 2003). Value chains for marine fishes differ from fish to fish and frequently within

regions. The value addition was found to be the highest (105%) from wholesaler to retailer, followed by 90% from wholesaler to exporter (Munir A *et al.*, 2006). As more intermediaries are involved in the marketing chain so it was needed to know their roles in the marketing channel. Again the marketing chain and the price of fish changes in course of time and for this reason it is very important to know the present status of marketing chain of Bombay duck and ribbon fish.

Materials and Methods

The study was based on market survey, collecting information through sample survey among fishermen, fish traders, middlemen and fish retailers. The study was conducted in Teknaf and Cox's Bazar Upazila under the district of Cox's Bazar. Three types of fish market such as primary, secondary and consumer markets were selected for this study. In addition, Dhaka city retail markets were selected to examine the price variation for distant market. Total sample size of the study was 120 which comprised mainly of 45 fishermen, *beparis* and depot owners, 40 brokers and marketing agents, and 35 retailers. Questionnaire was prepared to collect relevant information of the study

Data collection methods

Primary data were gathered by field survey for a period of about six months from November 2014 to April 2015. Combinations of participatory, qualitative and quantitative methods were used for data collection.

Participatory rural appraisal (PRA)

PRA is a group of methods to collect information in a participatory basis from rural communities. The advantage of PRA over other methods is that it allows a wider participation of the community, the information collected is likely to be more accurate (Chambers, 1992; Nabasa *et al.*, 1995).

Questionnaire survey

For questionnaire survey, different market operators such as fishermen, assemblers, wholesalers and retailers were interviewed. The interviews focused on marine fish distribution and marketing systems,

marketing costs, marketing profit and margin, value chain analysis, marketing constraints etc. Collected data were analyzed by Microsoft Excel.

Rapid market appraisal (RMA)

RMA is an efficient way to obtain policy-relevant and intervention-focused information about any commodity sub-sector (Holtzman, 2003). RMA techniques mostly rely on semi-structured interviews with key informants, knowledgeable observers of a sub-sector, and a minimum number of participants at different stages of the commodity system.

Cross-check interviews

Resource personnel in the study area like Upazilla Fisheries Officer (UFO), Manager of BFDC were interviewed for the accuracy of the data collected from the fishermen and intermediaries.

Calculation

$$\begin{aligned} \text{Total marketing margin (\%)} \\ &= \frac{\text{Consumer purchase price} - \text{Fishermen sales price}}{\text{Consumer purchase price}} \times 100 \end{aligned}$$

Total marketing profit

$$= \text{Total marketing margin} - \text{Total marketing cost}$$

Fishermen share in sales price (%)

$$= \frac{\text{Fishermen sells price}}{\text{Consumer purchase price}} \times 100$$

Results

Three levels of market or marketing systems were observed in the distribution channel of fish trade: primary, secondary / higher secondary and final consuming markets. Primary market was the catching point in the landing area. Secondary market/higher secondary market is a place where collectors brought the fish from primary market to the nearest upazila market. Fishes were sold to the consumers through retailers in the final consuming market.

Marketing channels for Bombay duck

Several marketing channels were found in marketing of Bombay duck. In marketing chain I, Bombay duck reached to local consumer from fishermen through aratdar, local market, local wholesaler and local retailers. In marketing chain II, Bombay duck reached to the drying yard from fishermen through

the middleman or aratdar/ assembler. From the drying yard, dried Bombay duck reached to distant consumers through distant wholesaler and distant retailer. In marketing chain III, dried Bombay duck reached to local consumer from drying yard through local wholesaler and local retailer. In marketing chain IV, dried Bombay duck reached to export market directly from drying yard (Figure 1).

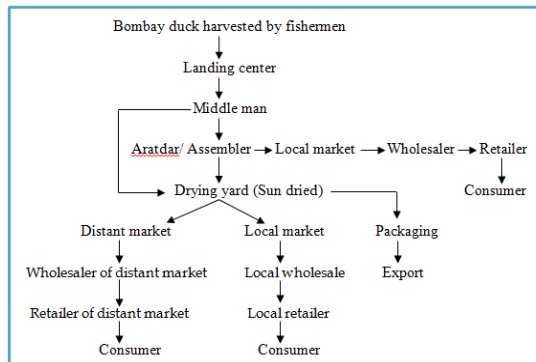


Figure 1. Marketing channels of Bombay duck

Marketing channels for ribbon fish

In marketing of ribbon fish, several market channels were found. In marketing chain I, ribbon fish reached to the drying yard from fishermen through the middleman or aratdar/ assembler. From drying yard, dried ribbon fish reached to local consumer through local wholesaler and local retailer. In marketing chain II, dried ribbon fish reached to distant consumer from drying yard through distant wholesaler and distant retailer. In marketing chain III, dried ribbon fish reached to export market directly from drying yard. In marketing chain IV, ribbon fish reached to distant consumer from fishermen through landing center, paiker/ aratdar, wholesaler of distant market and retailer of distant market. In marketing chain V, ribbon fish reached to local consumer from fishermen through middlemen, local market, local wholesaler and local retailers (Figure 2).

Marketing margin and profit

Bombay duck

Total marketing margin for per kg fish was BDT 19 which was 29% of the consumer purchase price and constituted 9%, 6% and 14% in primary, secondary

and consumer market, respectively. Total marketing profit for per kg fish was BDT 13 which constituted of BDT 4, 2.5 and 6.5 from the primary, secondary and consumer market, respectively. Fishermen share to sales price were 88%, 82% and 71% in primary, secondary and consumer market, respectively (Table 1).

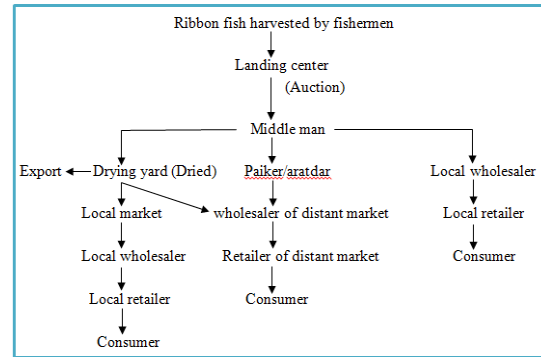


Figure 2. Marketing channels of ribbon fish

Ribbon fish

Total marketing margin for per kg fish was BDT 65 which was 28% of the consumer purchase price and constituted 10%, 5% and 13% in primary, secondary and consumer market, respectively. Total marketing profit for per kg fish was BDT 51 which constituted of BDT 17, 10 and 24 from the primary, secondary and consumer market, respectively. Fishermen share to sales price were 89%, 83% and 72% in primary, secondary and consumer market, respectively (Table 2).

Dried Bombay duck and ribbon fish

Total marketing margin of dried Bombay duck and dried ribbon fish were 115 and 120 which were 35% and 19% of the consumer purchase price, respectively. Total marketing profit of dried Bombay duck and dried ribbon fish were 89 and 95, respectively (Table 3).

Discussion

In the marketing channels, different types of intermediaries such as wholesaler, commission agent, *beparies*, *aratdars*, *paikers* (local market, distant market) and retailers were involved. In the present study revealed that Bombay duck had four and

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ribbon fish had five marketing chains with more than five intermediaries each. The main marketing channel of marine fish in Cox's Bazar and Chittagong districts are fishermen-beparies-aratdars-retailers-consumers Khalil (1999).

Supply chain of fish comprises of six intermediaries namely farmer, *aratdar*, *paiker*, trader, retailer and consumer for the distant domestic market Alam (2012).

Table 1. Marketing margin and profit of different intermediaries involved in marketing of Bombay duck in domestic marketing (BDT / kg)

Market level	Particulars of marketing	Price BDT / kg	% of consumer purchase price	Marketing margin (%)	Fishermen share in sales price (%)
Primary market	Purchase price (PP)	46	71 %	80-71= 9%	88 %
	Marketing cost (MC)	2			
	Sales price (SP)	52			
	Marketing margin (MM=SP-PP)	6			
	Marketing profit (MP=MM-MC)	4			
Secondary market	Purchase price (PP)	52	80 %	86-80= 6%	82 %
	Marketing cost (MC)	1.5			
	Sales price (SP)	56			
	Marketing margin (MM=SP-PP)	4			
	Marketing profit (MP=MM-MC)	2.5			
Consumer market	Purchase price (PP)	56	86 %	100-86= 14%	71 %
	Marketing cost (MC)	2.5			
	Sales price (SP)	65			
	Marketing margin (MM=SP-PP)	9			
	Marketing profit (MP=MM-MC)	6.5			
Consumer purchase price		65	100%		
Total marketing margin: 6+4+9=19 (29 %)					
Total marketing profit: (4+2.5+6.5)= 13 BDT / Kg					

Table 2. Marketing margin and profitability of different intermediaries involved in marketing of ribbon fish in domestic marketing (BDT / kg)

Market level	Particulars of marketing	Price BDT/kg	% of consumer purchase price	Marketing margin (%)	Fishermen share in sales price (%)
Primary market	Purchase price (PP)	170	72 %	82-72= 10%	89 %
	Marketing cost (MC)	5			
	Sales price (SP)	192			
	Marketing margin (MM=SP-PP)	22			
	Marketing profit (MP=MM-MC)	17			
Secondary market	Purchase price (PP)	192	82 %	87-82= 5%	83 %
	Marketing cost (MC)	3			
	Sales price (SP)	205			
	Marketing margin (MM=SP-PP)	13			
	Marketing profit (MP=MM-MC)	10			
Consumer market	Purchase price (PP)	205	87 %	100-87= 13%	72 %
	Marketing cost (MC)	6			
	Sales price (SP)	235			
	Marketing margin (MM=SP-PP)	30			
	Marketing profit (MP=MM-MC)	24			
Consumer purchase price		235	100%		
Total marketing margin: 22+13+30 =65 (28 %)					
Total marketing profit: (17+10+24)= 51 BDT / Kg					

While marketing Bombay duck and ribbon fish, the marketing margin were 29% and 28% of consumer price, respectively. It represented that the marketing margin of the fishes were between 25% or 30% of the consumer purchase price. Findings were similar with Islam *et al.* (2006), found marketing margin of

Bombay duck and shrimp was about 30% of consumer purchase price.

In case of dried Bombay duck and dried ribbon fish, marketing margin were 35% and 19% of consumer purchase price, respectively. Marketing margin of some dried marine fishes like Bombay duck, ribbon fish and jewfish was 28% of consumer purchase

price Reza (2002). In marketing of Bombay duck and ribbon fish, fishermen share was less than 74% in the consumer market. In marketing of some marine fishes the average share that fishermen received was 68% of the consumer purchase price (Islam et al.

2006). Findings of the present study clearly represents that usually fishermen receives small share of price from the fishes caught.

Table 3. Marketing margin and profit of different intermediaries involved in marketing of dried Bombay duck and ribbon fish in domestic marketing (BDT / kg)

Marketing steps	Bombay duck	Ribbon fish
Primary market		
Purchase price (PP)	210	500
Marketing cost (MC)	9	7
Sales price (SP)	252	537
Marketing margin (MM=SP-PP)	42	37
Marketing profit (MP=MM-MC)	33	30
Secondary market		
Purchase price (PP)	252	537
Marketing cost (MC)	7	7
Sales price (SP)	281	563
Marketing margin (MM=SP-PP)	29	26
Marketing profit (MP=MM-MC)	22	19
Consumer market		
Purchase price (PP)	281	563
Marketing cost (MC)	10	11
Sales price (SP)	325	620
Marketing margin (MM=SP-PP)	44	57
Marketing profit (MP=MM-MC)	34	46
Total marketing margin	115	120
Marketing margin percentage of consumer purchase price	35 %	19 %
Total marketing profit	89	95

Conclusion

The market price of the Bombay duck and ribbon fish seemed to be increasing step by step and was at the highest level when they reached to the consumer. It was inevitable because at every step the people involved were getting profit from it and that is why the price at the catching area was low but high at the consumer level. Thus fishermen share in the consumers purchase price is low in the marketing Bombay duck and ribbon fish. Intervention of the government and non-government organizations in the marketing channel is badly needed for marketing of marine fishes like Bombay duck and ribbon fish, ultimately for the improvement of economic condition of the fishermen.

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