

Fresh Fish Marketing Status in the Northwestern Bangladesh: Recommendations for Sustainable Management

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Abstract

The present study was conducted in six fish markets of Rajshahi city during July 2011 to June 2012. The main objectives of this study was to investigate the marketing channel, marketing cost, marketing margin and the problems associated with fresh fish marketing in Rajshahi city in order to provide recommendations for better fish marketing system. Primary data were collected from 50 fish traders and 150 consumers through previously prepared questionnaires and the secondary source of information consist of published materials such as journals, textbooks, newspaper etc. The results of this study revealed 10 fish marketing channels in fresh fish marketing. The highest and lowest average fish price were recorded as USD 5.99/kg and USD 1.89/kg for cat fish and snake heads respectively. Average marketing cost was found as 6.27% of the final retail price. The market margins for all intermediaries varied from 23.37% for cat fish to 48.57% for prawn species with an average of 40.75%. In contrast, producers' or fishermen's share ranged from 51.43% for prawn species to 76.63% for cat fish with an average of 59.25%. The major problems associated with the fish marketing were- presence of long fish marketing channels, involvement of unnecessary middlemen, inadequate and unplanned infrastructural development, rough and unhygienic method of handling, improper and insufficient use of ice, contamination and lack of knowledge on quality aspects among fish traders, insufficient hygienic auction and retail spaces, absence of cold storage facility, inadequate drainage facilities and lack of modern weighing system. Introducing government fish shops, planned infrastructural development of fish markets, introduction of wholesaling and retailing facilities, provision for government and private funding assistance for fish traders, hygienic conditions of landing centers and markets, training and extension works in marketing and management of relevant market research, formation of fishermen or fish producers' cooperative society, sufficient auction and retail places, improved sanitation and drainage system, digital weighing system, government run fish transportation system with proper storage facilities are recommended for more efficient fresh fish marketing system in Rajshahi city.

Key words: Fresh fish, marketing, Rajshahi city, marketing channel, marketing cost, market margin, problems, recommendations.

Introduction

Fish is the most diverse group of vertebrates known to man with more than 20,500 species (Eyo, 1992). In Bangladesh, fish is the greatest source of animal protein providing 60% of the total animal protein intake and fisheries sector has been playing a dynamic role in alleviating protein shortage, providing jobs for unemployed youth, earning foreign currencies and socio-economic development (FRSS, 2012). Total fish production was gradually grown up during the last 10 years in Bangladesh. In 2001-2002, the production was 1.89 million MT, whereas it was increased up to 3.06 million MT in 2010-11 (FRSS, 2012). About 97% of this production is marketed internally for domestic consumption while the remaining 3% exported to the foreign (Rahman *et al.*, 2009).

In marketing fresh fish passes through various market participants and exchange points before they reach the ultimate consumers. The marketing system and structure is one of the main circumstances of socio economic condition of the local people and production system of any area (Alam *et al.*, 2010). It is a chain of various systems involved in marketing from production sector to consumer sector with intra-linkage and inter-linkage. At all stages in the marketing chain, fish has to be packed and un-packed, loaded and un-loaded to meet consumers demand. Each handling cost will not amount much but the sum total of all loading can be significant, depending on the length of chain (Ali *et al.*, 2008). Subsequently, a greater difference in price paid between urban consumers at the end of the chain and farm gate price at the

beginning of the chain resulted that can lead to a greater or wider market margin between the producer and the final consumer. However, when the market margin is high, it may be used to argue that producers or consumers are being exploited. Nonetheless, high margin cannot often be completely justified lest the costs involved are totally understood and reasonable (Ali *et al.*, 2008). Fish supply and marketing suffer from various obstacles ranging from shortage of supply, price fluctuation due to drying up of the source, spoilage in transit etc. (Tomek and Robinson, 1981). Despite these, the people involved in the marketing of the fish appear to be on the increase because of increase in the population and therefore, the demand tends to be high and increase in concentration implies more scope for the middlemen to exploit either the consumers by charging high or the producer by paying them lower price (Tomek and Robinson, 1981). Moreover, market margin is an important indicator of market performance (Olukosi and Isitor, 1990). Often the middlemen performing the role of marketing are being accused of earning higher profits in the marketing system (Bryceson, 1993).

Fish marketing is completely maintained by the private sector in Bangladesh where four different tiers viz. primary, secondary, higher secondary and consumer market of marketing systems are observed in the process of distribution of fishes (Ahmed, 1983). Fish collectors commonly known as *Mahajans* or *Aratdars* procure fish from the catchers with the help of local brokers who get a profit margin or

commission from the *Mahajans*. However, the most serious marketing difficulties seem to occur in the remote communities owing to lack of transport, ice, poor road facilities and where the farmers are in a particularly weak position in relation to intermediaries (Rahman, 1997).

Rajshahi is one of the divisional cities of Bangladesh and is a city corporation covering an area of 96.69 km² with a population of 294056 (BBS, 2005). Total fish production in Rajshahi district in 2010-2011 was 74943 MT which is 2.45% of the total fish production of Bangladesh (FRSS, 2012). Almost 100% of this production is marketed in fresh condition in local fish markets to meet up the demand of the local people. However, there were no studies found in the literature on the fresh fish marketing system in Rajshahi city. Thus the present study was designed to investigate the marketing channel, marketing cost and marketing margin and problems associated with fresh fish marketing in order to provide recommendations for efficient fish marketing system in the Rajshahi city.

Materials and Methods

Study site and Data collection

The present study was conducted in Rajshahi city, northwestern Bangladesh during July 2011 to June 2012. Data for the study was collected from six fish markets of Rajshahi city namely Binodpur fish market, Talaimari fish market, Shaheb bazar fish market, Laxmipur fish market, Horogram fish market and Shalbagan fish market. Both primary and secondary data were used during the study. Primary data were

collected from 50 fish traders and 150 consumers through structured questionnaires. Secondary source of information consist of published material such as journals, textbooks, newspaper etc. Primary data included socio-economic variables such as price, cost, revenue, sales and problems allied with fish marketing.

Market margin analysis

Marketing margin is the difference between the price paid by consumer and that received by the producers and was calculated using the following formula-
Marketing margin (%) = (Selling price - Purchase price)/Selling price × 100

Results and discussion

Marketing channel

Marketing channel refers to the sequence of stages involved in transferring product from the farm to the consumer (Shepherd, 1996). In most of the cases, the producers/fishermen sold their catch through intermediaries predominantly when the consumer markets were in distant places from the production areas. The common practice of channeling the catch/harvest was through the commission agents. 10 marketing channels were observed in the flow of fresh fish in Rajshahi city's fresh fish marketing (Fig. 1). Selection of a suitable marketing channel depended upon the volume and quality of fish catch, distance of the market and the requirements of the consumers.

Channel 1: Fishermen - Consumer

Channel 2: Fishermen/Producer – Retailer - Consumer.

Channel 3: Fishermen/Producer - Wholesaler – Retailer - Consumer
Channel 4: Fishermen/Producer – *Aratdar* (Commission agent) – Retailer – Consumer
Channel 5: Fishermen/Producer - *Aratdar* (Commission agent) – Wholesaler – Retailer – Consumer
Channel 6: Fishermen/Producer – Wholesaler – *Aratdar* (Commission agent) – Retailer – Consumer
Channel 7: Fishermen/Producer – *Bepari* - *Aratdar* (Commission agent) – Retailer – Consumer
Channel 8: Fishermen/Producer – *Bepari* - *Aratdar* (Commission agent) – Wholesaler – Retailer – Consumer
Channel 9: Fishermen/Producer - *Aratdar* (Commission agent) – Wholesaler – *Aratdar* (Commission agent) – Retailer – Consumer
Channel 10: Fishermen/Producer – *Bepari* - *Aratdar* (Commission agent) – Wholesaler – *Aratdar* (Commission agent) – Retailer – Consumer

Price of Fish

Different types of fish were marketed in the fish markets of Rajshahi city. Fish marketed here were usually caught from the Padma and other nearby rivers, *beels*, or produced in the ponds nearby the city. Consumers had to pay highest average price of USD 5.99/kg for buying cat fish followed by USD 5.10/kg for prawn species and USD 4.60/kg for featherbacks (Table 1). On the other hand, lowest market prices were recorded for snake heads as USD 1.89/kg followed by exotic carps (USD 2.06/kg) and carp species other than Indian major carps (USD 2.10/kg). However, the price of fish was found to be varied considerably depending

upon the species, marketing channel, freshness, weight and source of fish, seasonal availability, consumer preference and demand.

Marketing cost, market intermediaries and their market margins

10 different types of marketing cost were involved in the fresh fish marketing (Fig. 2). Average total fish marketing cost was USD 0.18/kg fish. Highest 33.69% of the total marketing cost was for transportation and handling followed by fish container cost (20.08%) and loading and unloading cost (9.33%). The marketing cost ranged from 3% for cat fish to 9.46% for snake heads with an average marketing cost of 6.27% of the final retail price. However, the marketing cost is lower than that found by Rahman *et al.* (2009) in Khulna, Bangladesh as 20-25% and in Swarighat, Dhaka, Bangladesh as 15-20% (Alam *et al.*, 2010). Variations in the marketing cost of fish can be attributed to different types of cost in different areas and also due to lower transportation cost in fish marketing in Rajshahi as the fish marketed here were almost exclusively produced locally.

Marketing margins are indicators of trends in costs, profits and services provided by farmers and food marketing firms (Hussain *et al.*, 2003). This is the difference between what the consumer pays for food and what the farmer receives (Kohl and Uhl, 1972). The market margins for all intermediaries varied from 23.37% for cat fish to 48.57% for prawn species with an average of 40.75%. The result of the present study is similar to that of Rahman *et al.* (2009) and Alam *et al.* (2010) who reported

the intermediary's share of 35-40% and 40-45% in Khulna and Swarighat, Dhaka, Bangladesh, respectively. However, considering the average marketing cost of 6.27% it can be said that the intermediaries are making profit in fresh fish marketing in Rajshahi (Ali *et al.*, 2008) and the consumers and the fish producers/fishermen are being exploited. On the other hand, producers' or fishermen's share ranged from 51.43% for prawn species to 76.63% for cat fish with an average of 59.25%. However, the producer's or fishermen's share in fresh fish marketing in Rajshahi is relatively higher than that reported in Khulna and Khulna and Swarighat, Dhaka, Bangladesh as 40-45% and 30-40% respectively (Rahman *et al.*, 2009; Alam *et al.*, 2010). Nonetheless, the fish producer/fishermen are receiving only about half the price paid by the ultimate consumer and this is in consequence of the involvement of large percentage of the middlemen and commission agents reducing benefit of the fish producers/fishermen (Ahmed *et al.*, 1993; Mazid, 1994).

The fishermen or fish producers are getting only 59.25% of the price paid by the consumers where market margin for intermediaries is very high (40.75%) relative to the marketing cost (6.27%). After harvest/catch all the fish passes a number of channels and intermediaries and are transported by road, by trucks, by bus, and by boats mainly using bamboo baskets and plastic containers. At each stage of marketing channel the quality of fish deteriorates and price increases. The major problems associated with the fish marketing in Rajshahi city were found as- presence of

long fish marketing channels, involvement of unnecessary middlemen, inadequate and unplanned infrastructural development of the fish markets, rough and unhygienic method of handling, long exposure of fish to high temperature, improper and insufficient use of ice, contamination and lack of knowledge on quality aspects among fish traders, insufficient hygienic auction and retail spaces, absence of cold storage facility, overall unhygienic condition, inadequate drainage facilities, lack of modern weighing system. To save the fish producers/fishermen and consumers from the exploitation of middlemen and for more efficient fish marketing system in Rajshahi city the following measures could be recommended: the idea of government fish shops should be introduced so that instead of relying on middlemen, fish producers/fishermen and consumers could sell/buy fish directly in these shops. By introducing the government fish shops the marketing margins of middlemen could be substantially decreased and ultimately the share of the producers will be increased and the consumers can afford to buy fish at much lower price. Planned infrastructural development of the fish markets must be ensured, modern wholesaling and retailing facilities should be introduced, provision for government and private funding assistance for fish traders needs to be enhanced, hygienic conditions of landing centers and markets should be improved; training and extension works in marketing and management of relevant market research should be encouraged, formation of fishermen or fish producer's cooperative society should be encouraged, sanitation and

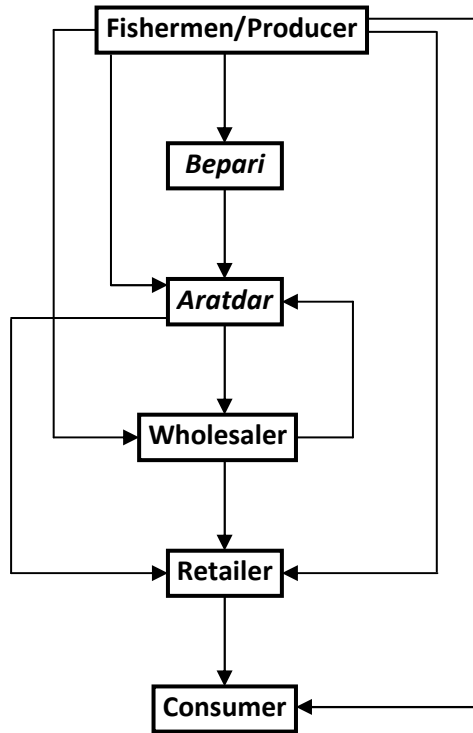


Figure 1. Schematic diagram showing the marketing channels of fresh fish in Rajshahi city.

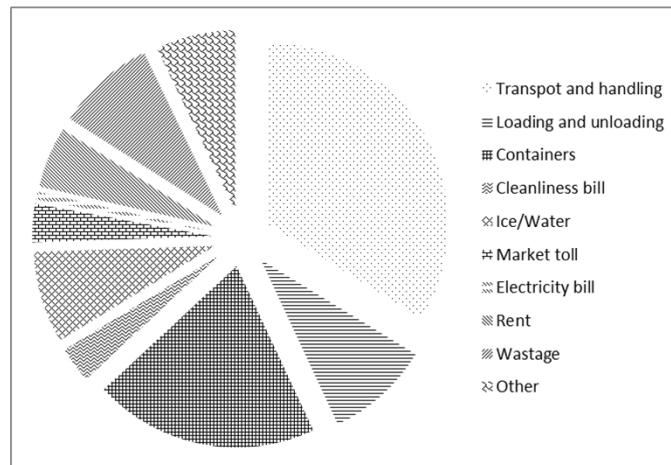


Figure 2. Marketing cost composition in fresh fish marketing in Rajshahi.

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Table 1. Average weight of fish (kg), average price at fishermen/ producer level (Tk/kg), average retail price (Tk/kg), producer's/fishermen's and intermediary's share on consumer's payment (%) in fresh fish marketing in Rajshahi, NW Bangladesh.

Fish group	Scientific name	Average weight of fish (kg)	Average price at fishermen/ producer level (USD/kg)	Average retail price (USD/kg)	Percentage of marketing cost on average retail price	Producer's/ Fishermen's share on consumer's payment (%)	Intermediary's share on consumer's payment (%)
Indian major carp	<i>Labeo rohita</i>	1.6	1.22	2.18	8.24	55.96	44.04
	<i>Catla catla</i>	1.5					
	<i>Cirrhinus mrigala</i>	0.7					
	<i>Aristichthys nobilis</i>	0.83					
Other carp	<i>Labeo calbasu</i>	0.65	1.1	2.1	8.55	52.38	47.62
	<i>Labeo bata</i>	0.15					
	<i>Cirrhinus reba</i>	0.22					
Exotic fish	<i>Hypophthalmichthys molitrix</i>	1.02	1.06	2.06	8.67	51.46	48.54
	<i>Ctenopharyngodon idella</i>	0.9					
	<i>Cyprinus carpio var. communis</i>	0.69					
	<i>Cyprinus carpio var. specularis</i>	0.65					
	<i>Pangasius sutchi</i>	0.73					
	<i>Oreochromis nilotica</i>	0.29					
	<i>Oreochromis mossambicus</i>	0.31					
	<i>Barbonymus gonionotus</i>	0.2					
Cat fish	<i>Heteropneustes fossilis</i>	0.09	4.59	5.99	3	76.63	23.37
	<i>Clarias batrachus</i>	0.15					
	<i>Batasio tengana</i>	0.04					
	<i>M. tengara</i>	0.035					
	<i>M. vittatus</i>	0.04					
	<i>M. cavasius</i>	0.035					

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	<i>Sperata aor</i>	0.85					
	<i>Rita rita</i>	0.35					
	<i>E. vacha</i>	0.25					
Spiny eel	<i>Macragnathus aculeatus</i>	0.12	2.14	3.52	5.11	60.79	39.21
	<i>Mastacembelus armatus</i>	0.14					
Featherback	<i>Chitala chitala</i>	2	2.97	4.1	4.38	72.44	27.56
	<i>Notopterus notopterus</i>	0.17					
Gobies	<i>Glossogobius giuris</i>	0.07	1.65	2.93	6.12	56.31	43.69
Snake head	<i>Channa punctate</i>	0.15	1.02	1.89	9.46	53.97	46.03
	<i>Channa striata</i>	0.26					
Prawn	<i>Macrobrachium rosenbergii</i>	0.08	2.88	5.6	3.21	51.43	48.57
	<i>Macrobrachium lamarrei</i>	0.002					
	<i>Macrobrachium malcomsonii</i>	0.003					
Indigenous small species	<i>Amblypharyngodon mola</i>	0.025	1.86	3.04	5.92	61.18	38.82
	<i>Trichogaster sp.</i>	0.02					
	<i>Puntius sp.</i>	0.02					
	<i>Aspidoparia sp.</i>	0.025					

drainage system should be improved in a planned way, hygienic condition must be ensured, sufficient auction and retail places should be ensured, digital weighing system should be introduced, fish traders should be trained for proper fish handling procedure, government run fish transportation system with proper storage facilities should be introduced.

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