



Status and Economics of Three Fresh Fish Markets in the North -West Region of Bangladesh

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Abstract

A study was conducted to analyze the status of fish marketing system in Parbatipur upazilla of Dinajpur district in the northwest region of Bangladesh during December 2010 to May 2011. The marketing chain from farmers to consumers in all the three fish markets was found to pass through a number of intermediaries. Four types of marketing channel were identified. The average marketing cost of retailer was 3.69 Tk/kg. The net marketing margin of the retailers for Indian major carps and Exotic carps were 8.42 and 19.17 Tk/kg, respectively. Seasonal variations in prices were observed with the highest in summer (March to May) and the lowest in winter (December to January). A number of constraints were identified. The infrastructure, transportation and packaging facilities were not satisfactory and sufficient in all the three fish markets under survey.

Keywords: *Marketing chain, pricing, marketing cost, net marketing margin, constraints.*

1. Introduction

Marketing is of high importance to fisheries and marketing of fish makes significant contributions to economic growth through generating employment, providing livelihood support and poverty alleviation. Fisheries development depends on improved production and processing technology and also on effective marketing system. Therefore, fish marketing is a vital aspect for sellers, consumers and other facilitating agencies. Fish marketing is not only limited to selling of fish but also includes all the activities which exert considerable impacts on the exploitation, production, distribution, preservation and transportation of fish in addition to actual sale of fish by reducing middlemen (Agarwal, 1990). In Bangladesh about 97 percent of the fish production is marketed internally for domestic consumption,

while the remaining part is exported (Rahman, 1997). Though fish farming is regarded as an industry and fish marketing system is well practiced in many countries of the world, the fish farmers in Bangladesh hardly get any chance to communicate directly with the consumers. However, the serious marketing difficulties seem to occur in remote communities because of lack of transport, ice and poor road facilities and where the farmers are particularly in weak position in relation to intermediaries (DFID, 1997). As fish is highly perishable with unpredictable supply, analysis of fish marketing system is essential considering the fact that fish is the main protein source in the diet of Bangladeshi people, which supplements 60% of total animal protein (DoF, 2012).

Fish also adds to the foreign exchange earnings of the country (Ranadhir, 1984). Fish production

can be increased through scientific method but without good marketing system it will ultimately be fruitless. Making fish available to consumers at reasonable prices at right time and place in fresh condition requires an effective marketing system. According to Olukosi *et al.*, (2007), marketing channel is the path of a commodity from its raw to finished form. Shrivastata and Randhir (1995), Quddus (1991), Mia (1996) and Rahman (2003) identified several fish marketing channels. Different studies were conducted on fish marketing system in different times in different regions by Ahmed (1983), Quddus (1991), Rokeya *et al.* (1997), Rahman (1997), Flowra *et al.* (2000), and Ahmed (2005). However, those do not appear to be sufficient to address the issues prevailing in fish marketing system in the North-West region of Bangladesh like Parbatipur upazilla. As Parbatipur upazilla has vast water bodies in form of ponds, *dighis*, canals, floodplain etc., it is important to know the existing fish marketing system of this upazilla. In view of the above this study was conducted to know the status of prevailing fish marketing system; and to identify the marketing inefficiencies and economics of fish market in Parbatipur upazilla.

2. Materials and Methods

The study was carried out for a period of six months from December 2010 to May 2011 on three different fish markets Natun bazar, Puratun bazar and Ambari bazar of Parbatipur upazilla in Dinajpur. The data for this study were collected by questionnaire interviews through simple random sampling method. A total of 45 fish traders (15 from each market) and 30 consumers (10 from each market) were selected randomly for interview. In each market around 20-35 retailers were involved. For the present study questionnaires were prepared in line with those of Siddique (2001) and were pretested and moderated for collecting the information. The data were analyzed and the parameters were obtained using the following formula:

- i. Market margin =
Sale price – Purchase price

- ii. Net marketing margin =
Market margin – Marketing cost
- iii. Farmer's share (%) =
 $\frac{\text{Farm price}}{\text{Final retail price}} \times 100$
- iv. Intermediaries' share (%) =
 $\frac{\text{Intermediaries' margin}}{\text{Final retail price}} \times 100$
- v. Faria's or Bepari's share (%) =
 $\frac{\text{Faria's or Bepari's margin}}{\text{Final retail price}} \times 100$
- vi. Paiker's share (%) =
 $\frac{\text{Paiker's margin}}{\text{Final retail price}} \times 100$
- vii. Wholesaler's share (%) =
 $\frac{\text{Wholesaler's margin}}{\text{Final retail price}} \times 100$
- viii. Retailer's share (%) =
 $\frac{\text{Retailer's margin}}{\text{Final retail price}} \times 100$

3. Results and Discussion

By conducting the study on Status and economic analysis of three fresh fish market we observed the exiting situation of Parbatipur upazilla and achieved indispensable results which were comparable with the earlier reported studies.

3.1. Status of surveyed fish markets in Parbatipur

Status of surveyed fish market in Parbatipur upazilla has shown a real condition in marketing system of Parbatipur upazilla as follows-

3.1.1. Structural condition

The marketing activities begin at 7.00 A.M. and ends at 6.00 P.M. but in many cases the duration was found to change depending upon selling and supply of fish as well as consumer's demand. Infrastructure facilities in all the surveyed three markets were found to be in a poor shape and appeared to be generally inadequate for handling highly perishable commodity like fish. The findings are shown in Table 1.

Table1. Comparative study of the infrastructure facilities of the surveyed fish markets

Facilities	Different fish markets		
	Natun bazar	Puratun bazar	Ambari bazar
Floor	Cemented	Cemented	Cemented and Not cemented
Roof	Tin shade	Tin shade	Tin shade and Chatai
Platform	Well developed	Not well developed	Not well developed
Electric supply	Present	Present	Present
Sufficient water supply	Absent	Absent	Absent
Water sources	Tube well	Tube well	Tube well and pond
Drainage system	Not well	Not well	Not well
Polythene paper	Used	Used	Used

3.1.2. Marketing channel

The present study indicates that the fish marketing channel starts with the fish farmer and after passing through a number of intermediaries ends at the ultimate consumer (Fig. 1). Fish farmers carry fish from remote villages to the commission agents for wholesaling and the commission agents charge 3-4% commission from the farmers for their services. The present findings agree with those of Rokeya *et al.* (1997), who mentioned that local agents collect fish from farmers on commission basis in the fish distribution network of Rajshahi. With a few exceptions, fish farmers hardly get any chance to communicate directly with the consumers. Market communication was usually being made through middlemen. The local paikers carried the fish (about 60%) from fish farmers to the markets by their own or hired transport and sell them to retailers with the help of *aratdars*. The fish farmers carried their catches (about 25%) to retailers with the help of *aratdars* (commission agents). The present study also reveals that the farmers partially sell their fish to the wholesalers (about 10%) with the help of *aratdars* and the wholesalers sell it to the retailers. In a very rare case, farmers carry the fishes (5%) to the markets and sell them to the retailers. All of which involve the active participation of *aratdars* and beparies as a strong link in the existing marketing system. From the survey, it was found that about 10% retailers used their own money for fish trading while the rest 90% received as loans from *aratdars* without any interest.

3.1.3. Sources, availability and amount

The present study reveals that most of the fishes (70%) come from the local areas (Holdibari, Horirampur, Atrai, Daglaganj, Debiduda, Chirirbandor, Habra, Dangapara, Islampur bazar arot etc.) and only 30 per cent come from outside mainly from (India and Myanmar). This more or less agrees with the findings of Ahmed and Rahman (2005) who reported that most of the fish (80%) is supplied from local sources and only 20 per cent is from outside in Gazipur. Many fish groups such as Indian major carp (rui, catla, mrigel), exotic fish (silver carp, mirror carp, sarputi, pangus etc.), SIS (mola, batasi, puti, darkina etc.), snake head (taki, shol etc), cat fish (shing, magur, tengra, air, boal etc.), featherback (foli, chital etc.), sad and herrings (*hilsa*) etc. were found to be available in all the three fish markets. Flowra *et al.* (2000) also reported the availability of four commercial fishes and prawn of the North-West region of Bangladesh. On an average, a fish trader in Puratun bazaar, Natun bazar and Ambari bazar was found to sell 18-30, 20- 45 and 15-35 killogram per day, respectively. The daily supply of fish in Puratun bazar was estimated to be about 0.36 to 0.75 metric-tones while that in Natun bazar and Ambari bazaar was 0. 46 to 1.35 metric-tones and 0.24 to 0.63 metric-tones, respectively. Ahmed and Rahman (2005) stated that the daily supply of fish market in Gazipur sadar and Sripur was about 2 to 3 and 1 to1.5 metric-tones, respectively.

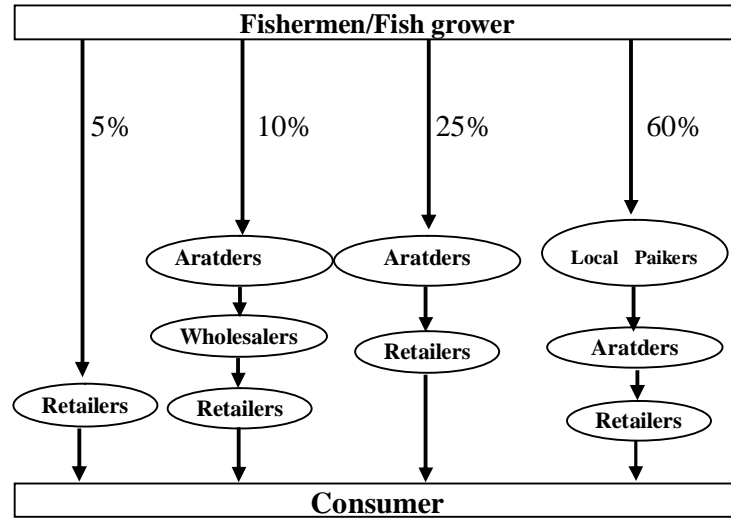


Fig. 1. Fish marketing chain from farmers to consumers as observed in the studied markets

3.1.4. Grading, selling and buying

Fishes were found to be graded based on species and size, but in some cases small indigenous fishes were not graded. The price of fishes was set at each intermediate sales point by open auctioning method to ensure the maximum prices. In Natun bazaar fish market, many retailers buy different types of fishes in order to sell those in rural fish markets. The amount of fishes sold in Natun bazar fish market is more than Ambari and Puratun bazaar fish markets. It appeared that government does not have any regulatory mechanism over the fixation of price of fish for consumers. Price of fish in the retail market was found to be based on demand and supply, besides eye estimation was still the common practice for price fixation in some cases. Similar types of selling and buying process were reported by Roy (2008) in Dinajpur district of West Bengal.

3.1.5. Preservation and transportation

Mainly two techniques were found to be in operation in the surveyed markets viz. live fish

in water and dead fish in ice. Ice is supplied from the nearby ice factories. However, in Puratun bazar there is no ice factory. Rahman (1997) reported that marketing organizations should have fish freezing and storage facilities as well as ice plants to ensure effective fish marketing systems. Different types of vehicles were found to be used for fish transportation, these were mechanized (train, tempo, nosimone, truck, etc. to be used) and non-mechanized vehicles (rickshaw, van, bicycle, etc.). The present findings more or less agree with those of Siddique (2001) who noted that the intermediaries in Mymensingh district used rickshaw, van, train, pushcart etc., Parween *et al.* (1996) and Rokeya *et al.* (1997) who stated that trucks, which carry consignments, mostly handle fish distribution in Rajshahi.

3.1.6. Containers and packing

Different types of containers were found to be used according to the condition of fish or incidental merits and demerits such as metal containers (Tray, Gamla, Pot, Khancha, Bucket,

etc.) and non-metal containers (Plastic gamla, Bamboo basket, Plastic basket, etc.). Fishes were found to be packed with ice and aquatic vegetation and bannalesves or gunnysacks in the study markets. Similar results were found by Parween *et al.* (1996) in Natore and Nawabganj districts and by Rokeya *et al.* (1997) in Rajshahi district.

3.1.7. Constraints

There are some constraints which were found in the three fish markets in Parbatipur upazilla namely Natun Bazar, Puratun Bazar and Ambari Bazaar. These constraints created some imbalance in marketing system and hampered real situation of the market. The constraints found in the market are given in Table 2.

3.2. Economic analysis

Economic analysis of three fresh fish markets in Parbatipur upazilla is very essential to gain pricing system, marketing cost, marketing margin etc. which can be helpful for development of livelihoods of a large number of people associated with the production, distribution and marketing systems.

3.2.1. Pricing

The price of different fish groups was found to depend on market structure, species, quality, size and weight of fish. Traders reported that the price of fish vary according to daily demand and

season with the highest in in-season (March to May) and off-season (December to February). Quddus (1991), Siddique (2001) and Rahman (2003)) found similar seasonal variation in fish prices, the highest in summer and the lowest in winter. Shrivastava and Ranadhir (1995) concluded that fish price was the highest in case of longest marketing channel as it involved high marketing cost in relation to gross margin in Bhubaneshwar, Orissan, India. Detail price of different groups of fishes are shown in Fig. 2, 3 and 4.

3.2.2. Marketing cost

The cost of marketing of a product refers to the expenses incurred by the different sets of intermediaries in the process of performing various marketing functions to reach the product from producers to the ultimate users. Different components of fish marketing costs were identified during the study such as transportation cost, cost of wastages, cost of storage and icing, and miscellaneous expenditures. Detail average marketing costs are shown in Fig. 5. According to Mia (1996), the average marketing cost per quintal of fish incurred by these intermediaries in Muktagachha, Fulpur and Mymensingh were 555.14, 209.91, and 660.53 Tk./kg, respectively. Gupta (2004) noted that the retailers who purchased fish from wholesalers and sold to the consumers earned a gross margin of Tk 780 per quintal in Fulpur upazila. After deducting marketing cost of Tk 78.43 per quintal, net margin stood at Tk 701.57.

Table 2. Different constraints of the surveyed fish markets

Facilities	Different fish markets		
	Natun bazar	Puratun bazar	Ambari bazar
Infrastructure	Not well	Not well	Not well
Poor sanitary conditions	Present	Present	Present
Lengthy marketing channel	Existing	Existing	Existing
Higher transport cost	More	More	More
Unstable production and price	Present	Present	Present
Political disturbance	More	More	More
Drainage system	Not well	Not well	Not well
Packaging facilities	Not well	Not well	Not well

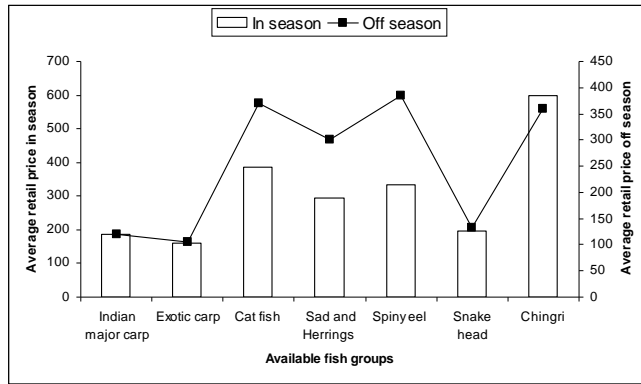


Fig. 2. Average retail price of available fish groups in Natun bazar fish market

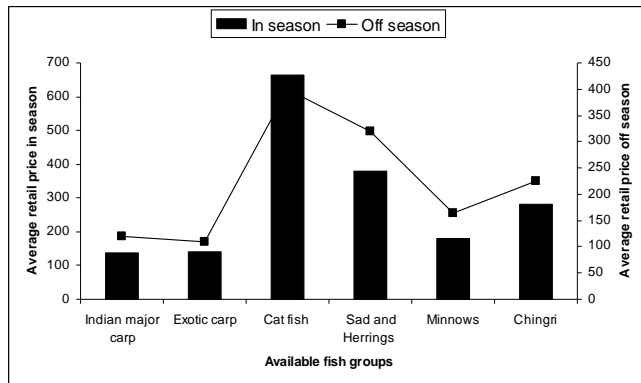


Fig. 3. Average retail price of available fish groups in Puratun bazar fish market

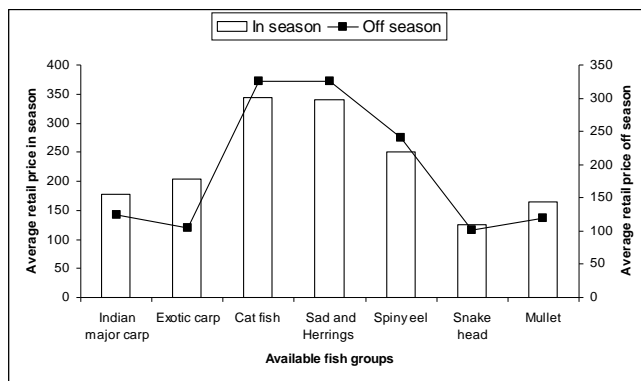


Fig. 4. Average retail price of available fish groups in Ambari bazar fish market

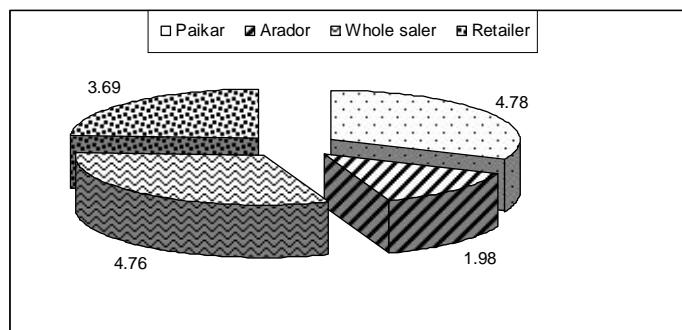


Fig. 5. Average marketing costs (Tk / kg) for fish marketing

Table 3. Net marketing margin and intermediaries share in case of some fish groups in the surveyed fish markets

Fish Groups	Intermediaries	Natun bazar		Puratan bazar		Ambari bazar	
		Net Marketing margin (Tk/kg)	Intermediaries share (%)	Net Marketing margin (Tk/kg)	Intermediaries share (%)	Net Marketing margin (Tk/kg)	Intermediaries share (%)
Indian major carp	Paikar	25	16.04	8.85	9.51	15.1	11.22
	Wholesaler	38.95	23.53	20.73	17.32	13.70	11.22
	Retailer	9.15	6.95	2.22	3.66	13.9	10.27
Exotic carp	Paikar	45	31.25	10.55	9.51	25.1	14.74
	Wholesaler	4.95	6.25	17.06	17.32	19.4	12.61
	Retailers	16.15	12.5	27.93	3.66	13.44	8.79
Cat fishes	Paikar	15	5.15	15.55	3.01	20.1	7.28
	Wholesaler	9.95	3.87	17.06	3.01	20.37	7.77
	Retailers	40.85	11.08	32.22	16.54	32.23	10.68

3.2.3. Net marketing margin

Marketing margin is the differences between the price received by the producers (Farm-get price) and price paid by the consumers (Retail price). Net marketing margins include marketing cost

and profit or loss incurred by all intermediaries in the marketing channel. Intermediaries share (%) in three fish markets under study is shown in Table 3. Ahmed (1983) reported that the producers received 50 per cent and the traders received 65 per cent share for rohu and shingi,

respectively. Ali *et al.* (2008) conducted a study on the economic analysis of fresh fish marketing and found marketing margin of 38.38 per cent, while the producer's share was 61.62 per cent. Ara *et al.* (2010) reported that the average marketing margin per quintal of fish for fishermen was 305.56 taka and for aratder, paiker and retailer were 334.65, 515.80 and 340.40 taka, respectively.

4. Conclusions and Recommendation

Fish farming is regarded as an industry but the fish farmers hardly get any chance to communicate directly with the consumers. Again, there are also a lot of constraints or limitations in the form of poor sanitary conditions, inadequate infrastructure, lengthy marketing channel, higher transport cost, unstable production and price, political disturbance etc. which hampered the real marketing system. As such, special care should be taken in handling, packaging and transportation of fish before placing fresh fish for sale to the consumers. Government (GO) and Non Governmental Organizations (NGOs) should therefore take effective steps and programmes to develop fish marketing system. If proper step is taken, it will be fruitful to remove poverty, ensure food safety and protein demand, and to develop the socio-economic condition of the people associated fish market- either consumer or seller or both.

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