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A Study on Fish Marketing Systems in Gazipur, Bangladesh

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Abstract: The present study concerned about the fish marketing systems in Gazipur, based on existing marketing systems, economic features of marketing activities and inefficiencies. In Gazipur, fish marketing is almost exclusively a preserve of the private sector where livelihoods of a large number of people are associated with fish distribution and marketing systems. The market chain from producers to consumers passes through a number of intermediaries: local traders, agents/suppliers, wholesalers and retailers. Based on a sample of 40 traders from the two different markets in Gazipur district, the daily supply of fish market in Gazipur Sadar and Sripur markets were estimated at 2-3 and 1-1.5 tones, respectively. Virtually most of the fish (80%) is imported from outside, the local supply amount only 20%. It is estimated that 48% of fish supplied in markets is of carps 13% hilsa, 9% catfish, 7% small indigenous fish, 6% prawn and shrimp, 5% tilapia and 12% others including marine fish. The price of fish depends on market structure, species quality, size and weight and it was found that the price per kilogram of carp increases with size. All traders in two markets made a considerable amount of profit.

Key words: Fish marketing, Gazipur, Bangladesh

INTRODUCTION

Fish production is an integral part of the marketing process as fish and fishery products are highly traded commodities^[1]. The total fish production in Bangladesh was estimated at 1.78 million tones in 2000-01, of which 1.4 (79%) and 0.38 (21%) million tones came from inland and marine water, respectively^[2]. About 97% of the production is marketed internally for domestic consumption while the remaining 3% exported^[2]. As compared to export market, domestic market is huge, varied and complex and in terms of volume, value and employment, the domestic market is great. A large number of people, many of whom living below the poverty line, find employment in the domestic fish marketing chain in the form of farmers, processors, traders, intermediaries, day labourers and transporters^[3-5].

In Bangladesh, fish marketing is almost exclusively a preserve of the private sector. However, the most serious marketing difficulties seem to occur in remote communities, which lack of transport, ice, poor road facilities and where the farmers are in a particularly weak position in relation to intermediaries^[6,7]. In addition, the

middlemen have established a new marketing chain based and the extreme exploitation of the fish farming communities by setting up an artificial pricing policy through intermediaries at different levels. As a result marketing margin of fish is often high and fish prices are high that makes dissatisfaction to consumers, fishermen, farmers and poor traders. Therefore it is important to know the existing fish marketing systems to identify marketing inefficiencies that having negative impact on poor fishermen/farmers and traders.

MATERIALS AND METHODS

Study site: The study area was Gazipur district and its two important fish markets, namely; Gazipur Sadar and Sripur. There are six major fish markets in Gazipur district, of which Gazipur Sadar and Sripur markets were selected after discussion with fish farmers, traders, Upazila Fisheries Officers, Mymensingh Aquaculture Extension Project (MAEP) staff and NGO workers, based on market history, number of fish traders and duration of trading season/time. Although Gazipur is not important for fish farming due to infertile soil, it is important for fish

marketing as almost all people like fish. Therefore, marketing point of view, the Gazipur district was selected for the study.

Methodology: The data was collected over nine months from March 2002 to December 2002. A combination of the following survey techniques were used for data collection:

Secondary data collection: Data about fish distribution and marketing information were collected from relevant government and non-government organizations such as Department of Fisheries (DOF), Upazila Fisheries Officers, MAEP staff and relevant NGO workers.

Primary data collection: Primary data were gathered by field surveys. This information was also used to confirm the secondary data. This survey involved the inspection of the study area in term of fish distribution and marketing information. Primary data were collected by using questionnaire interviews, Participatory Rural Appraisal (PRA) and cross-check interviews with key informants.

Questionnaire interviews: For questionnaire interviews, 40 fish traders (retailers) were selected in two markets (20 in each market) in the study area through simple random sampling method. Before interviews, questionnaire was tested in the field. Traders were interviewed at the market center. The interviews focused on fish marketing information, trading activities, pricing policy, problems of fish marketing and socio-economic conditions of traders.

PRA: PRA is a group of methods to collect information from rural communities in a participatory fashion^[8]. The advantage of PRA over other methods is that it allows wider participation of the community. The information collected is likely to be more accurate. For the present research project, PRA tool such as Focus Group Discussion (FGD) was conducted with fish farmers/fishermen in Gazipur Sadar and Sripur areas to get an overview of fish distribution and marketing systems, constraints of fish marketing etc. A total of 10 FGD sessions (5 in each area) were conducted where each group size of FGD was 6 to 12 farmers^[9].

Cross-check interviews: Cross-check interviews were conducted with key informants such as school teachers, local leaders, Upazila Fisheries Officers, MAEP project staff and relevant NGO workers.

Data processing and analysis: Data from various sources were coded and entered into a database system using Microsoft Excel software. Preliminary data sheets were compared with the original coding sheets to ensure the accuracy of the data entered. At each stage of survey, data were checked up, editing and coding at the field-level. Statistical method such as SPSS (Statistical Package for Social Science) was used to analyze the data. Data were summarized using descriptive statistics.

RESULTS

Fish market structure: The structure of the market could be characterized by a situation where there are many buyers and sellers. In Gazipur Sadar and Sripur markets, there are 4 to 7 wholesalers and 20 to 35 retailers involved in each market. A number of people also work with the traders as day labourers. The market is usually held daily in the morning and/or afternoon. In Gazipur Sadar market, traders are engaged in fish trading from early morning (7 am) to evening (5 pm), while in Sripur are engaged from early morning (7 am) to noon (1 pm). In Gazipur Sadar market, duration of trading time is longer due to greater numbers of consumers, wholesalers, retailers, suppliers and day labourers are involved than Sripur.

Marketing infrastructure: Infrastructure facilities for these two markets are still in a poor shape. The facilities are generally inadequate for handling highly perishable commodity like fish. The markets are not satisfactory with regard to space, stall, shade, sanitation, water supply, drainage, electricity and telecommunication. Due to poor roads and the absence of them in remote areas of Gazipur district, producers could not use other means of transport, which causing delay and deteriorate the quality of fish. The muddy roads of the villages are virtually inaccessible for the rickshaws and vans which are common for fish transportation. Lack of preservation facilities and shortage of ice supply are in turn affects the quality of fish.

Fish distribution channel: Fish distribution channel is a route along which harvested fish from the ponds or open waters is shipped to consumers. Fish marketing channel in Gazipur Sadar and Sripur markets are almost entirely conducted, financed and regulated by traditional, hardworking and skilled middlemen. The market chain from farmers/fishermen to consumers passes through a number of intermediaries: local fish traders, agents,

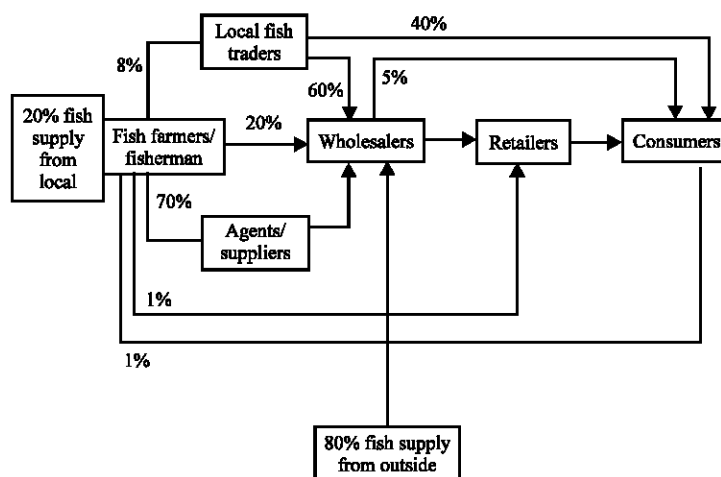


Fig. 1: Fish distribution chain from farmers to consumers in Gazipur (based on survey)

wholesalers and retailers (Fig. 1). The demand for fish is high in markets but supply is limited and a strong network has developed with brokers and traders intervening between farmers at one end and the consumers, at the other end. With a few exceptions, farmers never directly communicate with consumers, market communication normally being made through middlemen. The middlemen usually buy fish from the farmers but do not seem to have formal agreements. A few farmers directly sell their fish to wholesalers. Actually farmers would not like to bring their fish to wholesalers, because small catches, lack of market information, poor road and transport facilities, lack of money for fish transportation, negligible experience and technical knowledge on trading, etc.

In Gazipur Sadar and Sripur markets, local traders and suppliers could bring fish to wholesale markets where prices are determined in a competitive market situation. Local traders are normally based in local markets near to fish farming and/or fishing communities. It appears that local traders' first choice to sell in village markets and that only access quantity are destined to Gazipur Sadar and Sripur markets in order to keep local prices at the desirable level. Besides, local traders may have informal agreements with wholesalers obliging them to supply certain quantities in spite of the lower profit margins.

Agents or suppliers also carry fish from remote villages to the wholesalers in market centres and typically earns 1 to 5% commission for their services. Suppliers commonly use vans and rickshaws to transport the fish from the ponds to the markets, which takes 30 min to 3 h depending on market distance and road facilities. Sometimes suppliers take small amounts of dadon credit from wholesalers to ensure the supply of fish from farmers. Dadon is a system of tied credit through which the wholesalers advance money to the suppliers in

exchange for the assured sale of fish. Wholesalers sell their purchase to the retailers. Retailers, in turn, sell the fish directly to the consumers.

Supply of fish in markets: Fish seems to be accepted by all religious and social groups in Gazipur area. In general the income group buying large fish and the lower middle-class being able to afford medium-sized and small fish. Smaller restaurants and hotel also buy fish but most of the fish is consumed by the households. According to market survey, the daily supply of fish in Gazipur Sadar and Sripur markets can be estimated at 2-3 and 1-1.5 tones, respectively. Virtually most of the fish (80%) is imported from outside (other parts of Bangladesh and India and Myanmar), the local supply amount only 20%. Trains, buses, trucks and pickups are used for transport of fish to wholesalers in Gazipur Sadar and Sripur markets from outside of Gazipur. Consignment of fish are handled by the intermediaries in different markets and when required, fishes are cleaned, iced, sorted, preserved, stored, packed and transported. In general fish come from Kuliarchar, Netrokona, Mohongonj, Gualunda, Madaripur, Bhairab Bazar, Bagerhat, Barisal, Chadpur etc. where there are major landing and marketing centres for bulk quantity of fish. Due to strong preference of people, production from inland freshwater resources is largely consumed in fresh form. However, use of ice for long distance transport and short term storage of the product are also in practice.

According to the survey, it was found that a fish trader of Gazipur Sadar sell an average 75 kg fish daily, compared with 45 kg in Sripur. There is a significant difference ($p < 0.05$) between amount of fish sold by traders and markets. Demand of fish is increasing in the markets due to increasing population. The present supply figure indicates quite a considerable increase during the last

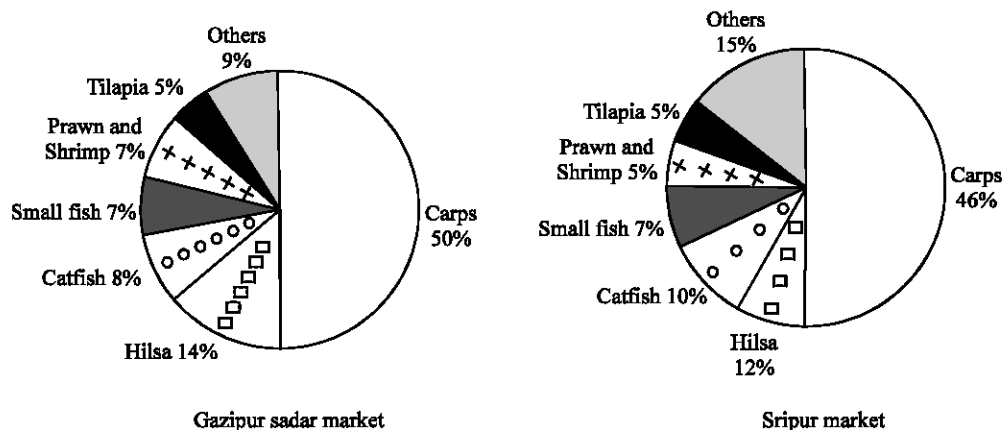


Fig. 2: Estimated market share by fishes

10 years. According to District Fisheries Office, in 1992, fish supplies to the markets were not exceeding 900 kg day⁻¹ market⁻¹. Nevertheless, it is probably safe to say that compared to some 10 years ago, the market volume has increased and that consumers are slowly growing used to including more fish in their menu. It was estimated that around 20% more fish is generally supplied during fish harvesting season (November-January). As a result more fish is generally consumed during this season which is also festivities and the wedding season.

Large fishes such as 5-10 kg Indian Major carps were sold whole and/or piece, while small fish are sold by negotiation. Some times live cat fishes are kept alive in earthen pails and are sold on the basis of their number and sizes by species. Most dead fishes are sold often in poor condition. Retail transaction is done by either eye estimation or weighing and often both systems are used simultaneously at the same market.

According to the survey, traders typically operate with capital of around Tk 5,000 to 25,000 per day. The wholesalers possess more capital (Tk 20,000 to 100,000) than retailers and have the means to control agents and retailers. Few of the wholesalers (10%) also operate as retailers and have stall in markets. From the survey it was found that around 60% retailers used their own money for fish trading, while the rest (40%) received loans. According to these traders who received loans, 70% obtained from moneylenders (wholesalers also play role as moneylenders) and 30% from banks. The average interest rate for moneylenders was estimated at least 120% per year (10% per month), while for banks was 30% per year.

Market share by fish: It is estimated that about half of the fish supplied in these two markets is of Indian and exotic carps. Besides the carps, small quantities of other fish,

e.g., hilsa, catfish, tilapia, small indigenous fish, prawn and shrimp and other fish including marine can be seen in the markets. From the survey, it was found that more than half of the carps (55%) is imported from India and Myanmar (Fig. 2). It is noteworthy that consumers still prefer Bangladeshi fish and some retailers would even claim that carps from India and Myanmar would not like many consumers, although increasing sales. Figure 2 shows the market share of major fish in two different markets.

Price of fish: There is no price policy fixed by the government and trade association. Prices are set by different methods, such as open auction, bargain and whisper. Open auction are conducted at wholesale markets. When farmers and middlemen sell fish to wholesale markets, the price is set usually through auction by a wholesaler. The price is settled by competition among intending bidders. The highest bidder takes prompt delivery of the commodity in exchange of cash payment. In the presence of buyers (retailers) the bids are loudly announced by auctioneer (commission agents). Auctioneer usually charges about 2-5% of the sale price from wholesalers and also sometimes keeps a small quantity of fish as commission. The price is settled by competition among intending bidders. In retail markets bargain is a common practice of setting fish prices between retailers and consumers. However it is rarely practiced in wholesale markets.

A price trend can be calculated for carps as around half of in the markets. There is a difference of price between carp produced in Bangladesh and India or Myanmar, as Bangladeshi carp is preferred and fetch a higher price than carp from other countries. Bangladeshi carp is considered to be fresher than India and Myanmar and there is skepticism towards carp from other countries

Table 1: Average retail price (Tk kg⁻¹) of carp in two different markets

Fish species	Size of fish (kg)	Gazipur sadar	Sripur
Indian major carps	Rohu	<1	80
		1-2	135
		2-4	195
	Catla	<1	62
		1-2	110
		2-4	155
Mrigal	<1	55	52
	1-2	95	85
	2-4	128	120
Exotic carps	Silver carp	<1	50
		1-2	65
		2-4	72
	Grass carp	<1	40
		1-2	55
		2-4	62
	Common carp	<1	55
		1-2	65
		2-4	71

Source: Survey data (2002)

Table 2: Key constraints for fish marketing by traders.

Constraints	Gazipur sadar n = 20	Sripur n = 20	Total N = 40
Higher transport cost	9 (45)	7 (35)	16 (40.0)
Getting lower price of fish	5 (25)	6 (30)	11 (27.5)
Poor ice supply	4 (20)	4 (20)	8 (20.0)
Lack of money	2 (10)	3 (15)	5 (12.5)

n: sample size; figures in parentheses indicate percentage

having been packed in ice for several days. Among the carp species, Indian major carps (rohu, catla and mrigal) fetch higher prices than the exotic carps (silver carp, grass carp and common carp) a result very much similar to the findings from South-western part of Bangladesh^[10]. The reason for the low prices of exotic carps can be explained by the demand and taste that consumers are not willing to pay high prices, but an important factor is lower production costs to allow supplying fish at this price. Naturally, the price of carp depends on market structure, location, species, quality, size and weight. The price is also influenced by supply and demand and there are generally seasonal variations in prices with the highest in summer (March to May) and the lowest in winter (November to January), during the fish harvesting season. Survey of two fish markets showed that the price per kilogram of carp increases with size for both Indian major carps and exotic carps, however there is no significant difference between price of carps and markets (Table 1).

Profit margin: From the survey it was found that the primary producers hardly get 40-45% of the retail market prices for their carps. Fishermen/farmers share of the retail prices varies considerably depending upon the cost of transportation, preservation, icing and tools paid to leaseholders of markets. Middlemen get 35-40%, the quality/weight loss of 5-10%, while the remaining 20-25% was spent for transportation, preservation and other charges.

Constraints of fish marketing: From the study it seems that the marketing chain is quite longer and requires longer time for transportation. In absence of cold chain system, it is estimated by farmers and traders that about 10-12% of fish is caught becomes spoilt and unsuitable for human consumption. Improper handling, poor post-harvest care and limited market information to ignorant lot of fish farming communities are other major constraints for efficient marketing. Isolation of fish farming/fishing communities from the marketing network, poor physical facilities at wholesale and retail market centres, poor transport system, inadequate preservation support etc. are the main constraints. There is no quality control measure for these fish markets.

According to the traders, political disturbances may also affect fish transporting as well as marketing. As a result, the perishable product of fish get damage and the traders sell these at cheap price, sometimes they even fail to get any revenue due to decomposition.

Traders were requested to state their single most important constraint regarding fish marketing. Here, 16 (40%) of respondents identified this as higher transport cost. The proportion of respondents identifying getting lower price as a poor marketing conditions was 11 (27.5%). The proportion of respondents identifying poor supply of ice was 8 (20%). Only 5 (12.5%) noted that lack of money to be the most important constraint for this business (Table 2).

DISCUSSION

It is a common indicator of marketing efficiency is the size of the marketing margin which is the differences between the farm gate price and the next price level such as retail. Margin could be high if the marketing costs and/or profits are high. Marketing costs are high if marketing functions are not performed efficiently due to functional difficulties such as poor roads, inadequate storage leading to losses, poor handling, etc. Profits may be high if there are high risks of losses and huge capital investment.

Producers in remote areas are generally not aware of the existing price of their product in the market. In the absence of correct knowledge about the actual market price situation, producers are vulnerable to a certain degree of exploitation by the traders/middlemen. However, even if producers are aware of the market price but have no market power to bargain.

As the production sectors are being separated from the consumption sectors, making marketing costly and difficult. Like other part of Bangladesh, fish marketing in Gazipur Sadar and Sripur markets are almost entirely conducted by middlemen, where entry of new comers are restricted.

The middlemen undertake risks that may arise from fish spoilage and price fluctuations. Irrespective of the extent of profits they earn in the face of extreme hazards, inadequate physical facilities, poor transportation and price fluctuation, their services are generally considered the most essential for fish marketing in Gazipur and broadly in Bangladesh. Fish are bulky and highly perishable and therefore it should be moved from the farm gate to the market quickly and at a low cost.

Seasonal fluctuation of fish price is a normal phenomenon. However, when the fluctuation is too drastic and wide, it affects adversely farmers/fishermen and consumers. When fish price increase, it often produces a beneficial effect on fishermen but not on consumers. In contrast, the decrease in price often causes beneficial effect to the consumers but not to the farmers/fishermen. Therefore, price fluctuation should be kept at the minimum possible level by maintaining fish supplies at markets at a fairly constant level throughout the year.

At the national or policy level, government plays in an important role in improving marketing through appropriate price policies, training and extension works in marketing and conduct of relevant market research.

Improve road systems to provide a better service to the producers so as to minimize losses, lower the cost of transport and ensure the products reach the consumers at the right place and time.

By developing modern marketing infrastructure facilities at sale points, increasing the provision of cold storage facilities, insulated and refrigerated transport vehicles and adequate supply of ice, increasing competition and providing stability to wholesale and retail markets etc. both the producers and consumers interest may be protected. These will be significant improvement in the market in terms of efficiency.

Strengthening the bargaining power of the farmers through the formation of association is a step in the right direction.

Specific suggestions for improving marketing systems should incorporate:

- Improvement of fish transport, handling and shipment facilities,
- Establishment of ice factories for sufficient supply,
- Introduction of modern wholesaling and retailing facilities,
- Training of fish market operators in areas of fish preservation, handling, icing and curing,
- Introduction of fish quality control measure,
- Provision of governmental, institutional and banking assistance,

- Improvement of hygienic conditions of fish landing centers and markets.

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