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Fish Marketing System in Southern Bangladesh: Recommendations for Efficient Marketing

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Abstract

This study aimed to explore the marketing channel, marketing cost and marketing margin and problems associated with fish marketing in order to provide recommendations for efficient fish marketing system in Barisal city, southern Bangladesh. Data were collected from seven fish markets of Barisal, southern Bangladesh including Port road fish market, Taltoli bazar fish market, Chaumatha fish market, Notullabad bus stand fish market, Kasipur bazar fish market and Bazar road fish market. Both primary and secondary data were used during 1 year study period from May, 2011 to April, 2012. Primary data were collected through field surveys and pre-structured questionnaire was used for interviewing of 10 organizers, 20 aratdars (commission agent), 50 fish traders and 100 consumers. Secondary source of information consists of published materials such as journals, textbooks, newspapers and also from interviewing different government and non-government officials and members of various fisheries related cooperative societies. The results of this study revealed 11 fish marketing channels in Barisal city's fish marketing system. The average marketing cost ranged from 4.15% to 8.33% (6.76±0.98) % of the final retail price. The highest and lowest average fish price were recorded as USD 7.07/kg and USD 1.03/kg for giant fresh water prawn and silver carp, correspondingly. Intermediaries' marketing margin on different species' marketing fluctuated from 29.6% to 50.28% (39.38±5.22) % for silver carp and brown shrimp marketing, respectively. Establishment of modern fish landing center and retail markets near the fish landing port, introduction of government fish shops and insulated and refrigerated fish vans and fish carriers, training of all personnel related to fish marketing about fish handling, quality of fish, hygiene practices, improvement of existing fish market structure, provision for government and private funding assistance for fishers/fish farmer, formulation and enactment of independent act/ordinance for fish landing and marketing are highly recommended.

Key words: Fish marketing, marketing channel, margin, recommendations, effective marketing, Barisal, southern Bangladesh

Introduction

Fish passes through various market participants and exchange points prior to reach the ultimate consumers in marketing process. Marketing of fish is almost entirely a function of the private sector and operates through a complex system of village markets, township markets, assembly centers, major urban wholesale and retail markets (DOF, 2012). Marketing channel is a chain of various systems involved in marketing from production sector to consumer sector with intra- and inter-linkages. At all stages in the marketing chain, fish has to be packed and un-packed, loaded and un-loaded in order to meet consumers' demand. Each handling cost does not always amount much but the sum total of all costs can be significant depending on the length of chain (Ali *et al.*, 2008). In Bangladesh, the fish marketing system is almost exclusively controlled by middlemen's including commission agents becoming the buyer and seller of the commodity whereby they obtain a percentage fee of the auctioning (Amin *et al.*, 2012; DOF, 2012). The fishers are often compelled to hand over their catches to the trader/middleman (Aratdar/Paikar) at a price determined by the latter. The factors that weaken the fisherman's bargaining position are their dependency on credit and illiteracy. Consequently the most serious marketing difficulties seem to occur in the remote communities owing to lack of credit, poor transportation facilities and insufficient storage facilities (Rahman, 1997). Therefore the fishing communities are particularly in weak position compared to intermediaries as the middlemen have established a marketing chain based on extreme exploitation of the fishing communities by setting up an artificial pricing policy through intermediaries at different levels.

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. Despite these, the people involved in the marketing of fish appear to be on the increase because of increase in the population and therefore, the demand tends to be high for the cheap sources of nutritious food 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 (Ali *et al.*, 2014; Tomek and Robinson, 1981). Often the middlemen performing the role of marketing are being accused of earning higher profits in the marketing system (Bryceson, 1993). Nonetheless, an appropriate marketing system is essential not only to retain the quality of fish after fishing but also to ensure the maximum profit of the fishers. In many advanced and developed countries the improved methods of fish marketing are being adopted with the advancement of fisheries development. A progressive fish marketing system will also provide remunerative price to the primary producer and also the interest of the consumers is protected.

A total of 54137 metric tons (MT) of fish were produced from the inland waters of Barisal district, southern Bangladesh in 2010-11 (FRSS, 2012). Almost all of these productions went through the local marketing system. The fish marketing system in Bangladesh faces serious problems including heavy losses, wastes and poor fish quality, deprivation of the fishers/fish farmer and that of Barisal city is of no exception. Yet since fish demand

generally exceeds supply, there is limited incentive for traders to improve the quality of marketing system. However, no studies were found in the literature on prevailing fish marketing system in Barisal city which are prerequisite for efficient fish marketing system and its development. Therefore, this study aimed to explore the marketing channel, marketing cost and marketing margin and problems associated with fish marketing in order to provide recommendations for efficient fish marketing system in Barisal city, southern Bangladesh.

Materials and methods

Study area and data collection

Data for the present study were collected from seven fish markets of Barisal city including Port road fish market, Taltoli bazar fish market, Chaumatha fish market, Notullabad bus stand fish market, Kasipur bazar fish market and Bazar road fish market. These are the most common and well known fish markets in this city. Both primary and secondary data were used during the study period of 1 year from May, 2011 to April, 2012. Field surveys were used for the collection of primary data. Pre-structured questionnaire was used for interviewing of 10 organizers, 20 aratdars (commission agent), 50 fish trader and 100 consumers. In addition, focused group discussion (FGD) was used to get an overview of particular issues such as existing marketing channels, pricing policies, constraints of fish marketing and recommendations for sustainable fish marketing system. Secondary source of information consists of published materials such as journals, textbooks, newspaper etc. Moreover, secondary data were collected from appropriate government and non-government organizations such as Department of Fisheries, Government of Bangladesh, Barisal Matsha Aratdar Samity and Barisal Matsha Arat Sramic Union.

Market margin analysis

The market margin of producer/fishers and different intermediaries is calculated using the following formula-

Marketing margin (%) = (Selling price - Purchase price)/Selling price × 100

Data analysis

Data analysis was done using computer software Microsoft® Excel 2007.

Results and discussion

The results found during the present study are discussed below-

Marketing channel

Marketing channel plays major role in controlling the quality and price of the product. Usually the producers/fishers sold their catch through intermediaries especially when the consumer markets were in distant places from the production areas. Similar to the fish marketing system in other regions of Bangladesh, the common practice of channeling the fish in Barisal was through the commission agents. 11 marketing channels were observed in the flow of fish in Barisal city's fish marketing (Figure 1). Choosing appropriate marketing channel depended upon the volume and quality of fish catch, distance of the market and the demand of the consumers as was reported by Rahman *et al.* (2012).

Channel 1: Fishers/ Fish Farmer – Consumer

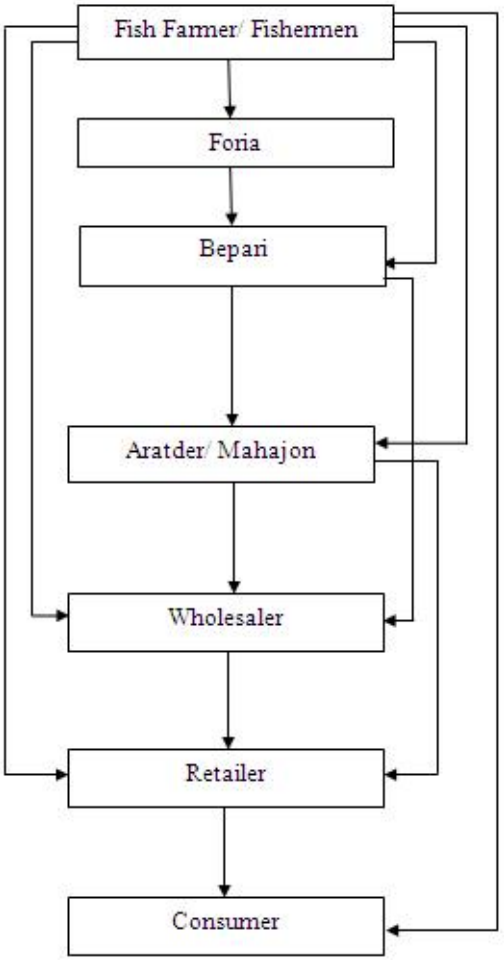

Figure 1. A typical layout of marketing channels of Barisal city's fish markets.

Channel 2: Fishers/ Fish Farmer – Retailer – Consumer
Channel 3: Fishers/ Fish Farmer – Wholesaler – Retailer – Consumer
Channel 4: Fishers/ Fish Farmer – Aratdar (Commission agent) – Retailer – Consumer
Channel 5: Fishers/ Fish Farmer – Aratdar (Commission agent) – Wholesaler – Retailer – Consumer
Channel 6: Fishers/Producer – Wholesaler – Aratdar (Commission agent) – Retailer – Consumer
Channel 7: Fishers/ Fish Farmer – Bepari – Aratdar (Commission agent) – Retailer – Consumer
Channel 8: Fishers/ Fish Farmer – Bepari – Aratdar (Commission agent) – Wholesaler – Retailer – Consumer
Channel 9: Fishers/ Fish Farmer – Aratdar (Commission agent) – Wholesaler – Aratdar (Commission agent) – Retailer – Consumer
Channel 10: Fishers/ Fish Farmer – Bepari – Aratdar (Commission agent) – Wholesaler – Aratdar (Commission agent) – Retailer – Consumer
Channel 11: Fishers/ Fish Farmer – Foria - Bepari - Aratdar (Commission agent) – Wholesaler – Aratdar (Commission agent) – Retailer – Consumer

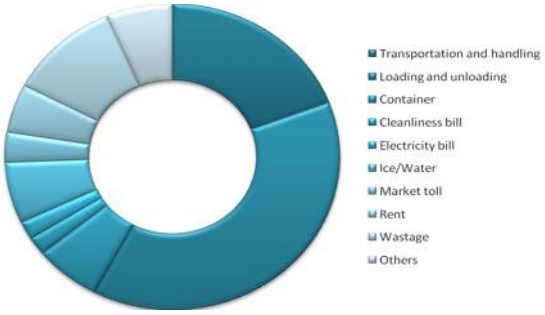

Figure 2. Marketing cost composition in fish marketing in Barisal city's fish markets.

Marketing cost

The present study reveals that the price of fish increase owing to different marketing costs and benefit incurred by the middlemen at each stage of marketing. There were 10 different types of marketing costs involved in the fish marketing of Barisal city. The categories of these costs include

transportation and handling cost, loading and unloading cost, container cost, cleanliness bill, electricity bill, ice/water cost, market toll, rent, wastage and others (Fig. 2). The average marketing cost ranged from 4.15% to 8.33% (6.76±0.98) % of the final retail price (Table 1). The present study also exposed that the price of fish was not same at different stages in the marketing process and found to vary from producer to consumer by the involvement of various intermediaries. However, the marketing cost is lower than that found by Rahman *et al.* (2009) in Khulna as 20-25% and in Swarighat (Dhaka) as 15-20% (Alam *et al.*, 2010). Variations in the marketing costs of fish can be attributed to different types of costs in different areas, number of intermediaries and their profit margins (Rahman *et al.*, 2012).

Fish price

Present investigation reveals that the fish available in the studied fish markets were mainly caught from the Meghna River, Tetulia River, Kirtonkhola River and other small rivers, beels, ghers, floodplains or produced in the ponds, ghers and Sea. Fish price varied significantly from species to species and also depending upon the source, size and freshness of fish. Highest price was recorded for giant fresh water prawn (USD 7.07/kg) followed by stinging catfish, long whiskered catfish (USD 6.43/kg) and hilsa shad (USD 5.79/kg) (Table 1). In contrast, lowest market prices were recorded for silver carp as USD 1.03/kg followed by spotted snakehead (USD 1.28/kg). Nonetheless, the price of fish varied considerably depending upon the species, marketing channel, freshness, weight and source of fish, seasonal availability, consumer preference and demand which reflects the findings of Rahman *et al.* (2012) in northwestern Bangladesh.

Middlemen's/ Intermediaries' share

The market share for all intermediaries on different species varied from 29.6% to 50.28% for silver carp and brown shrimp marketing, respectively with mean share of intermediaries' being (39.38±5.22)% which is roughly similar to that reported in Khulna, Swarighat (Dhaka) and Rajshahi as 40-45% , 30-40% and 40.75%, correspondingly. On the other hand, producers' or fishers' share ranged from 49.72% to 69.74% (60.62±5.22)% that is relatively higher than those reported in Rajshahi, Khulna and Dhaka as 59.25%, 40-45% and 30-40%, respectively (Alam *et al.*, 2010; Rahman *et al.*, 2009; Rahman *et al.*, 2012). Nonetheless, the fish producer/fishers are receiving only about half to two thirds of the price paid by the ultimate consumer which is due to the involvement of large number of the middlemen and commission agents and their high margins (Ahmed *et al.*, 1993; Mazid, 1994, Rahman *et al.* 2012).

Major constraints of fish marketing

The major constraints of fish marketing system in Barisal resemble the existing problems of overall fish marketing systems in Bangladesh which could be summarized as- presence of long fish marketing channels, low price of fish at fishers/producers' level, involvement of unnecessary middlemen, inadequate and unplanned infrastructural development of the fish markets, poor communication system and high transportation cost, rough and unhygienic method of fish handling and

Table 1. Fish name, marketing cost and marketing margin of different intermediaries in fish marketing channel of Barisal city, southern Bangladesh

Local Name	English Name	Scientific Name	Average retail price (USD/kg)	Percentage of marketing cost on average retail price	Intermediaries share on consumer's payment (%)	Producer's/ Fishermen's share on consumer's payment (%)
Koi	Climbing Perch	*Anabas testudineus*	2.57	5.89	38.88	61.12
Aor/ Air	Long whiskered catfish	*Sperata aor*	6.43	6.33	46.66	53.34
Tengra	Tista batasio	*Batasio batasio*	1.95	6.67	46.06	53.94
Bou mach	Reticulate loach	*Botia lohachata*	1.80	8.11	44.44	55.56
Katal	Catla	*Catla catla*	1.80	6.99	38.88	61.12
Mrigal	Mrigal carp	*Cirrhinus cirrhosus*	2.10	6.86	46.17	53.83
Tatkina	Reba carp	*Cirrhinus reba*	1.80	8.17	44.43	55.57
Shol	Striped snakehead	*Channa striatus*	3.22	8.39	43.55	56.45
Taki	Spotted snakehead	*Channa punctatus*	1.28	8.22	31.10	68.90
Magur	Philippine catfish	*Clarias batrachus*	3.22	7.91	45.10	54.90
Khalisa	Banded gourami	*Trichogaster fasciata*	1.93	6.15	41.47	58.53
Grass carp	Grass carp	*Ctenopharyngodon idella*	1.87	6.83	37.54	62.46
Bom Maitta	Kawakawa	*Euthynus affinis*	3.86	5.97	33.69	66.31
Bale	Tank goby	*Glossogobius giuris*	2.57	6.67	44.71	55.29
Chapila	Indian river shad	*Gudusia chapra*	2.06	7.35	41.31	58.69
Pleco	Sucker mouth catfish	*Hypostomus plecostomus*	5.15	5.92	47.63	52.37
Silver carp	Silver carp	*Hypophthalmichthys molitrix*	1.03	7.83	29.16	70.84
Shingi	Stinging catfish	*Heteropneustes fossilis*	6.43	5.64	45.88	54.12
Bhetki/	Barramundi	*Lates calcarifer*	4.12	7.65	44.96	55.04
Rui	Roho labeo	*Labeo rohita*	2.83	5.18	36.76	63.24
Bata	Bata	*Labeo bata*	2.06	6.86	41.79	58.21

Ghonia	Boggut labeo	*Labeo boga*	1.93	7.18	38.36	61.64
Tara Baim	One-stripe spiny eel	*Macrognathus aral*	1.54	6.48	40.18	59.82
Golda Chingri	Giant fresh water prawn	*Macrobrachium rosenbergii*	7.07	6.69	45.10	54.90
Sal Baim	Zig-zag eel	*Mastacembelus armatus*	3.22	5.42	41.37	58.63
Kouwa	Torpedo scad	*Megalaspis cordyla*	1.42	7.66	41.71	58.29
Harina chingri	Brown shrimp	*Metapenaeus monoceros*	1.93	8.59	50.28	49.72
Bheda/	Gangetic leaf fish	*Nandus nandus*	1.67	6.99	31.10	68.90
Foli	Bronze featherback	*Notopterus notopterus*	3.86	5.59	32.4	67.60
Tilapia	Mozambique tilapia	*Oreochromis mossambicus*	1.54	5.24	38.88	61.12
Nilotica	Nile tilapia	*Oreochromis niloticus*	1.29	6.67	34.99	65.01
Pangus	Pangus	*Pangasius sutchi*	1.29	7.18	36.55	63.45
Punti	Pool barb	*Puntius sophore*	1.61	5.73	38.57	61.43
Rup chanda	Chinese silver pomfret	*Pampus chinensis*	3.86	7.59	32.66	67.34
Tit Punti	Ticto barb	*Puntius ticto*	1.03	5.92	39.85	60.15
Boro chok poa	Bigeye croaker	*Pennahia anea*	1.93	6.67	36.29	63.71
Botol/Surma	Indian mackerel	*Rastrelliger kanagurta*	1.29	6.89	35.77	64.23
Chitra	Spotted scat	*Scatophagus argus*	2.57	7.44	40.82	59.18
Phasa	Gangetic hairfin anchovy	*Setipinna phasa*	2.06	6.37	36.45	63.55
Chompa	Talang queen fish	*Scomberoides commersonianus*	2.70	7.70	41.10	58.90
Tulardandi	Flathead sillago	*Sillaginopsis panijus*	3.09	6.54	40.50	59.50
Bau	Bengal loach	*Botia dario*	1.40	4.15	31.72	68.28
Churi	Small head hairtail	*Eupleurogrammus muticus*	1.54	6.24	30.79	69.21
Goina	Kuria labeo	*Labeo gonius*	1.55	5.67	32.40	67.60

Chusra fish	Mixed SIS		1.39	4.76	34.64	65.36
Chingri	Black tiger shrimp	*Penaeus monodon*	2.83	6.59	43.12	56.88
Ilish	Hilsa shad	*Tenualosa ilisha*	5.79	7.59	36.81	63.19
Mochon	Big-scale sand smelt	*Atherina boyeri*	2.57	7.83	40.82	59.18
Koittar	Coitor croaker	*Johnius coitor*	2.57	7.83	43.16	56.84
Sona baim	Barred spiny eel	*Macrognathus pancalus*	1.50	7.3	30.26	69.74
Surma	Indian mackerel	*Rastrelliger kanagurta*	3.60	6.9	41.65	58.35

transportation, long exposure of fish to high temperature/direct sunlight, improper and insufficient use of ice, lack of modernized preservation system in fishing boats/vessels, quality deterioration of fish due to inappropriate and insufficient chilling and freezing facilities, contamination and lack of knowledge on quality aspects of fish among the fishers/fish farmer/traders, insufficient hygienic auction and retail spaces, absence of cold storage deep freezing facility, inadequate drainage facilities, lack of modern weighing system, lack of electricity and pure water supply.

Recommendations for efficient fish marketing

Establishment of fish landing center and retail market near the fish landing port so that the number of intermediaries involved will be decreased, in addition the idea of government fish shops should be introduced so that instead of relying on middlemen, fish producers/fishers and consumers could sell/buy fish directly in these shops. Introduction of insulated and refrigerated fish vans and fish carriers to maintain cold-chain during transportation to retain fish quality for longer period, training of all personnel related to fish marketing about fish handling, quality of fish, hygiene practices, improvement of existing fish market structure, provision for government and private funding assistance for fishers/fish farmer with a view to improving fish quality and improved fish marketing, formulate and enact independent act/ordinance for fish landing and marketing should be ensured. Furthermore, basic fish marketing requirements such as sufficient pure water supply, continuous electricity supply, introduction of modern weighing system, well planned drainage and sanitation system, proper hygiene system, sufficient ice supply, deep freezing storage facility are highly recommended. Finally formation of effective and functional fishers/fish farmer's cooperative society is also suggested to ensure better and effective fish marketing system.

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