

Fish Marketing System in Singra Fish Landing Center, Singra, Natore, Bangladesh

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Abstract: The present study concerned about the fish marketing in Singra fish landing center based on existing marketing system economic futures of marketing activities and in efficiencies in Singra fish marketing is all most exclusively a preserved of the private sector where livelihoods of a large number of people are associated with fish distribution and marketing system. The market chain from producers to consumers passes through a number of intermediaries: local traders agents and suppliers, wholesalers and retailers. In Singra fish landing center 80% fishes are imported form Chalan beel 20% form various fisheries resources. It estimated that the amount of supplied fishes 60% is carp fish, 20% is small fish and 20% is cat fish.

Keywords: Fish marketing, marketing channel, profit margin, Singra fish landing center Bangladesh.

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I. INTRODUCTION

The fisheries sector plays an important role in food consumption, nutrition, employment and export. The sector contributes more than 5% of Bangladesh's GDP and 9% of its export earnings and it employs 1.4 million people. Fish production is an integral part of the marketing process as fish and fishery products are highly traded commodities. The total fish production in Bangladesh was estimated at 1.78 million tons in 2003-04, of which 1.4 (79%) and 0.38 (21%) million tons came from inland and marine waters respectively (BBS, 2005). About 97% of the production is marketed internally for domestic consumption while the remaining 3% exported. 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 the employment in the domestic fish marketing chain in the form of farmers, processor, traders, intermediaries, day labours and transporters (Ahamed, *et. al.*, 1993; Islam, 1996 and DFID, 2000). In the agro-based economy of Bangladesh, the fisheries sector contributes near about 58% of animal protein to the daily diets of the population, about 3.74% to GDP, 4.04% in export earnings and 20.87% to agriculture in 2007-08, (DOF, and Ministry of Fisheries & Livestock). This sector provide full-time employment of 1.4 million professional Fishers and Fish farmer, and 11 million part-time Fishers, fish farmer and women, which is about 10% of total population.

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. With intra-linkage and inter-linkage from production sector to consumer sector, it is a chain of various systems involved in marketing. As fish and fishery products are highly traded commodities, fish production is a necessary part of the marketing process to make a whole complete. The total fish production in Bangladesh was estimated to near about 2.56 million tons in 2007-08, of which near about 2.07 (80.59%) and 0.5 (19.41%) million tons came from inland and marine waters respectively (DOF, Ministry of Fisheries & Livestock). About 97% of the production is marketed internally for domestic consumption while the remaining 3% exported to the foreign (Ahmed *et al*, 1993). Fish from many areas, flow to Singra fish landing center due to eating habits and economic conditions. Hence, it has become one of the main fish trading centers in Dhaka city. The system and price of other places such as Rampura, Malibagh, and Santinagar etc in the city is determined by its system and price.

In Bangladesh, fish marketing is almost exclusively maintained by the private sector. Four distinct types viz. primary, secondary, higher secondary and consumer market of marketing systems are observed in the process of distribution of fishes in Bangladesh (Ahmed, 1993). 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 which lack of transport, ice, poor road facilities and where the farmers are in a particularly weak position in relation to intermediaries (Rahman, 1997). In addition, a new marketing chain have settled by the middlemen

based on the extreme exploitation of the fish farming communities by setting up an illogical artificial pricing policy through intermediaries' at different levels. As a result dissatisfaction to consumers, farmers, fishers and poor traders occur due to high marketing margin and high prices.

The fresh fishes are mainly marketed in the vicinity of the households in the rural market of Bangladesh. The fishes, which are not sold in fresh condition, are generally used for producing dried and fermented products. The highest quality loss of 35% occurs due to longer exposure of fish at high temperature followed by 25% rough handling and excessive pressure, The present study is concerned with the existing marketing systems to identify marketing inefficiencies that having adverse impact on farmers, Fishers and poor traders (Rahmanet *al*, 2009).

II. MATERIALS AND METHODS

Study Site:

The study site was Singra, Natore, located at the north- west part of Bangladesh. It is one of the most common, oldest and well known fish market in Bangladesh. This market is very important for fish marketing as almost all people like fish.

Methodology

The data was gathered over May 2009 to December 2009. For gathering data, combination of several survey techniques was adopted are as follows: was used also. The study area was visited officially to check on standards in term of fish distribution and marketing information. By using questionnaire interviews and direct observations, primary data were gathered for this survey.

Questionnaire Interviews

27 fish traders were carefully choose as the most suitable in the study area through careful inspection for the questionnaire interviews. Questionnaire was examined in the field before interviews. At the market center, traders were interviewed through a formal conversation for this purpose. Information about fish marketing, pricing policy, trading actions, constrains of fish marketing and socio-economic conditions of traders are the consequences of the interviews.

Data Processing and Analysis

Using Microsoft Excel software, data from different relevant sources were coded and recorded into a data base system. To make certain the accuracy of the data recorded at each stage of the survey, similarity between preparatory data sheets and the original coding sheets were assessed; accuracy and quality of the data were examined up, edited and coded at the field level.

III. RESULTS

Marketing Process

In the fishery trade, fish marketing has a momentous role. Protecting provision of the interest of trader and consumer are always performed by a good market. The provision of welfare and protection for maximum efficiency of production, best possible quality of commodity and their supply at an appropriate time to consumer at fair and sensible price are also taken by a trader. Before reaching to the consumers who have varying incomes, tastes and preferences, fisheries captured by a large no of scattered, small fishers are assembled, transported, stored, processed and passed through several channels.

Fish Market Structure

The structure of the market could be characterized by a situation where there are many buyers and sellers. In Singra fish landing center there are 27 wholesaler or aratder and 25-30 retailers. A number of people also work with the traders as daily basis (200 Tk. per day). Singra market is held at every-morning from 5.30 am to 8.00 am is known as the largest whole fish market in Natore district. Every trader has a fixed space for their business. There is no stalls for the traders but a few sheds are already exists. There is no Electricity or telecommunication, but preservation or freezing facilities of Singra fish landing center is well developed.

Educational Structure of Fish Traders

To have some thorough background of knowledge is absolutely necessary for all traders. Actually it is true that education is not an essential subject for the fish trading, but chooses to follow and be aware and familiar with the latest technology and appropriate use of it, education is must. Also, it is almost impossible to operate the fish market without a good performance in education. In Signra, fish traders are near about 18.18% illiterate, 21.21% primary level, 30.76% secondary level, 24.34% H.S.C and 5.51% degree level (Figure1).

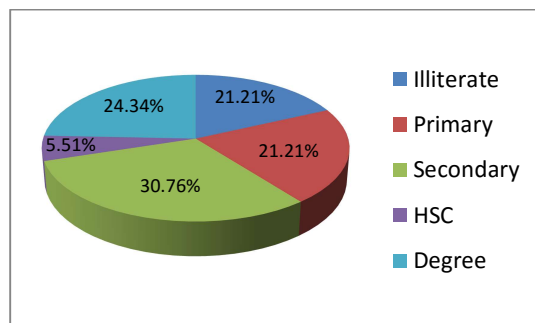


Figure 1: Educational Structure of Fish Traders

Secondary Occupation of the Traders

All the traders have alternative sources of income in most of the cases, and sometimes fisheries sector found as their alternative source of income. Possibility of risk tolerating tendency rely on how strong is his alternative source of income. In Singra fish landing center, There are many other source of income for the traders and those can be recognized as Medicine business, Dredging, Automobile business, Cookeries business etc. From the survey, it is obtained that the secondary occupation of most of the Arottdar is also a business. And who have no other occupation or business are directly related with fish trading.

Level of Interest of the Fish Traders

The self esteem of the traders to do his job is expressed as the Level of interest. If they are not satisfied with their work, there always have a chance to change their job and migrate to other jobs. In Singra fish landing center, most of the traders are satisfied with this job, but there are some traders who are unsatisfied and some have no comments. In general, most of the traders do this job as a family tradition.

Level of Knowledge of the Traders to Keep Fish in Good Condition

It is very important for a market to supply the good product to its customers. Fish is the most perishable food and easily goes for denaturation. There is only one way to maintain its quality and for that the knowledge about this is too much essential. In Singra fish landing center, most of the traders have medium knowledge, some have poor knowledge and very few people may have high knowledge about this.

Ice Supply & Cold Storage

Mostly block ice is used with manual methods being used to change the form of blocks to crushed ice. Especially at peak season, there is clearly a deficiency of ice and this is reflected in the prices charged for the same. Only river water is used for making ice which is of very uneven quality and is often not chlorinated. It looks so muddy and translucent.

Handling & Transport of Fish

The transportation system of fish determines the demand and purity or hygienic condition of it, because with the change of time, fish will perish rapidly. Also its value decreases, if it requires too much time to transport this fish from the collection point to the market. Singra fish landing center gets a very good facility from the topography, as this market is situated at the side of the Atri River and also at the side of the highway. To carry fish over larger distances from the collection point to the market, mainly river transport is used but fishes from local area are transported by road or river. Two types of fishes are found here as dead fish and live fish. Normally Shol, Taki, Pangus, Koi, Shing, Magur are transported here as live form. Dead fish carried to the market in box or cages but live fish by drum or tray. Mainly small Pangus are carried by tray. Each drum contains 35-40 kg of fish with water. Mainly this type of fish is transported by truck, van and other mechanical vehicles. On the other hand, dead fishes are carried at a rate of 10 ton per truck. Fish has carried into and out of the market by head-load; baskets involve unnecessary handling as there is no access of vehicles.

Hygienic Condition and Sanitation

Hygienic condition of Singra fish landing center is so poor. At the market time these place become so muddy and walking become very difficult. There is no source of hygienic water for ice making and cleaning of fish. River water is used for this purpose. There is no drainage system and Sanitation receives a low priority at all stages of marketing. For example, cleaning and washing of fish and containers to carry fish are not common practice and fails to use chemicals (bleaching powder, chlorine etc) to sterilize surfaces which are used to hold fishes.

Fish Distribution Channel

Three levels of market or marketing systems are observed in the distribution channel of fish trade (Figure 2 & 3). They are primary, secondary/higher secondary and final consuming markets.

Primary market

This is the marketing place at the catching point, in the rural area. Fish collectors, commonly known as *mahajans* or *aratdars* procure fish from the catchers, with the help of local brokers called *dalals* who get a profit margin or commission from the *mahajans*. Part of the catch is also locally sold by the catcher/farmer or by local retailers. Sometimes fishermen/fish traders bypass these channels and sell fish directly to these secondary markets.

Secondary market

The collector bring the fish from primary market to the landing centers, usually to the nearest upazila market or at a place well linked by rivers, road and rail networks. The *mahajans* sell the fish here to distributors known as *beparies*, generally with the help of *aratdars*, the commission agents. The *beparies* transport the fish to the nearest city/town markets by road, rail or boat. These are the main distributing markets and here the *beparies* sell the fish to another set of distributors known as *paikars*, again with the help of *aratdars*.

Final consuming markets

On purchasing fish from the higher secondary market, the *paikar* sell the fish to the retailers. There are two channels of retailing: the urban retailers sell the fish in the urban markets in permanent stalls or go out with the fish on their heads or in tricycle vans, to sell them at the residential areas. Others, the retailers take the fish to sub-urban places or to the villages.

In Bangladesh, fish is marketed through many different channels and outlets. There is lack of marketing infrastructure for both wholesale and retail market. For the most part, the transportation and storage facilities are poor. The involvement of large percentage of the middlemen and commission agents reduce benefit to the fish producers (Ahmed et al. 1993, Mazid 1994).

In Singra fish landing center local traders and suppliers brought fish to wholesale markets where prices are determined in a competitive market situation while in new market most of the fish (80%) collected from Chalen beel and 20% from various fisheries resources nearer Singra in Natore district.

Figure 2 shows the distribution channel of fish in markets studied. Local traders are normally based in local markets near to farm area or of fishing communities. It appears that local traders first chose local village. Agents or suppliers carry fish from remote village to wholesalers in market centres and earns 1 to 5% commission for their services. Wholesaler sales to retailer and ultimately final consumers buy from retailers.

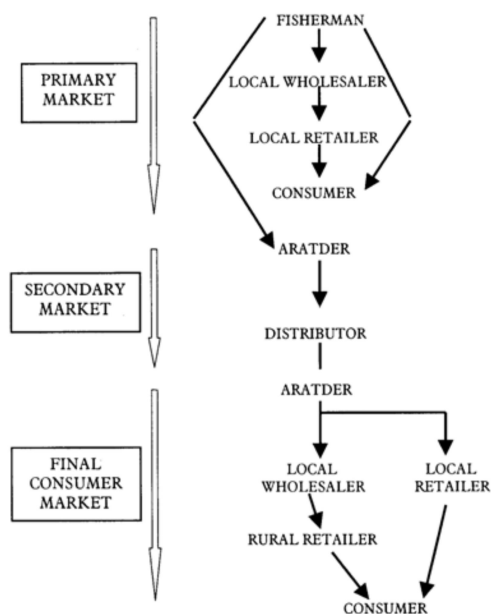


Figure 1. General Flow chart for marketing channel of fish

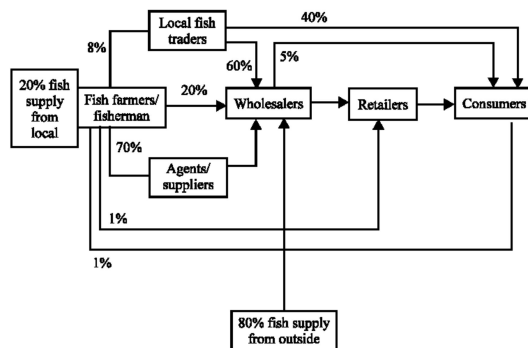


Figure 3. Flow chart for marketing channel of fish in two markets

The average market price of the different species varies widely. Species wise average monthly landing and their prices.

Table--1: Total landing and price of different fish species which are available in Singra fish landing center.

Local name of species	Total amount kg/ day/ arat	Price Tk/kg
Rui	620	160
Cattla	580	150
Mrigel	291	165
Kalbaus	90	180
Silver carp	600	100
Bighead carp	550	120
Grass carp	650	80
Pangus	380	120
Bata	270	90
Telapia	250	355
Tangra	135	160
SorPunti	125	100
Mola-Dhela	80	120
Japani-Rui (Tempoo)	70	140
Pholi	50	400
Chitol	120	160
Taki	40	450
Boal	75	370
Chingrii	200	95
Hungeri	150	75
Nilotica	190	130
Rai-khor	120	140
Koi	220	300
Pabda	40	600
Patashi	60	500
Shing	50-70	550
Magur	50-70	550
Gojar	30	400
Gagor	70	160
Guchi	160	250
Puia	220	120
Cuchia	5-6	350
Ilis	150-210	400

Table-02: Average landing per Arat and retail price of carp fish in the different months at Singra fish landing center in the year May, 2009 to December 2009.

Year	Months	Average landing per day (kg) / Arat	Average landing per month (kg) / Arat	Average price per day (Tk.)
2009	May	329.23	10206.13	122.52
	June	321.45	9643.50	120.65
	July	320.35	9930.85	121.45
	August	335.90	10412.90	119.27
	September	420.25	12607.50	120.72
	October	415.78	12473.40	118.95
	November	418.72	12561.60	115.20
	December	435.29	13058.70	118.65

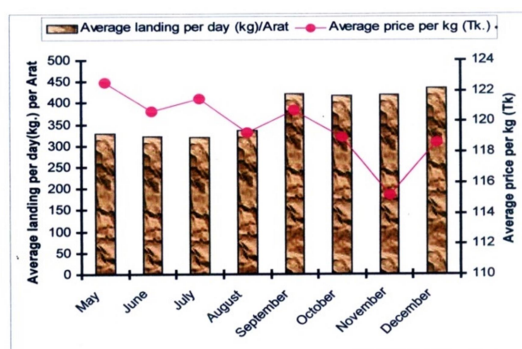


Figure 4: Average landing per day (kg) per Arat and retail price of carp fish in the different months at Singra fish landing center in the year May, 2009 to December 2009.

Table-03: Average landing per Arat and retail price of small fish in the different months at Singra fish landing center in the year May, 2009 to December 2009.

Year	Months	Average landing per day (kg) / Arat	Average landing per month (kg) / Arat	Average price per day (Tk.)
2009	May	72.30	2241.30	210.08
	June	75.32	2259.60	195.05
	July	73.57	2280.67	180.37
	August	72.35	2242.85	150.30
	September	80.52	2415.60	100.70
	October	88.75	2662.50	100.35
	November	72.53	2775.90	110.27
	December	97.50	2925.00	112.37

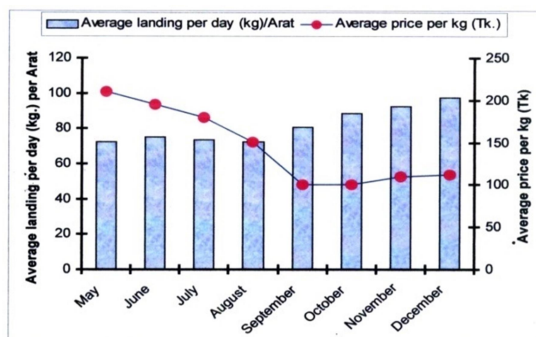


Figure 5: Average landing per day (kg) per Arat and retail price of small fish in the different months at Singra fish landing center in the year May, 2009 to December 2009.

Table-04: Average landing per Arat and retail price of cat fish in the different months at Singra fish landing center in the year May, 2009 to December 2009.

Year	Months	Average landing per day (kg) / Arat	Average landing per month (kg) / Arat	Average price per day (Tk.)
2009	May	77.59	2327.70	550
	June	80.75	2422.50	525
	July	90.79	2814.49	500
	August	98.50	3053.50	450
	September	110.78	3323.40	500
	October	175.95	5278.50	500
	November	170.30	5109.00	550
	December	180.39	5411.70	500

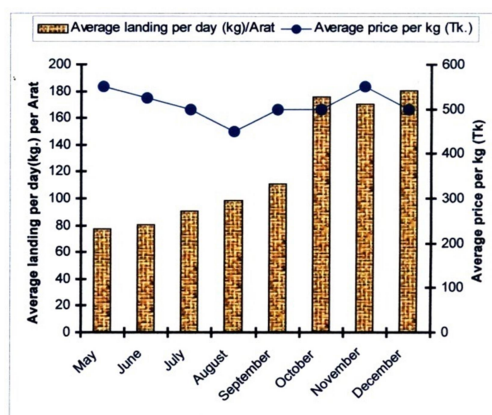


Figure 6: Average landing per day (kg) per Arat and retail price of cat fish in the different months at Singra fish landing center in the year May, 2009 to December 2009.

Profit margin

From the present study, it was found that the primary producers hardly get 40-45% of the retail market prices of their products. Fishermen or fish farmers share of the retail prices varied considerably depending upon the cost of transportation, icing and leaseholders of the markets. Middlemen got 35-40%, the quality or weight loss 5-10% while the remaining 20-25% was spent for transportation, preservation, icing and other charges.

IV. DISCUSSION

Due to high population growth there is an ever-increasing gap between supply and demand of fish in our country. To narrow this gap not only requires increased production but also needs improvements at all aspects of fish marketing and distribution system (SAARC, 1994). Presence of a long marketing channel in the prime factor for increased market price (Ahmed, 1993), along with constraints in the storage, preservation and transport system. Major share of the fish price goes to the hand of the aratdars and minimum to the fishers. Singra fish landing centre had been established to collect the catches of the Chalanbeel, and to provide quick supply to near and far districts. Besides the landing centre, individual fish arats have been established 1990 at Singra.

From the present survey a total of 49 fish arats, 45 fish arats are active. Few of them have licensed. All of these arats collect fish mainly from the villages of Singra, which are situated in and around the Chalanbeel. During the monsoon and flood the major portion of the fish is from the catches of the beel. Besides that fishes are also supplied from Natore, Bogra, Rangpur, Dinajpur, Nilphamari, Lalmonirhat, Pabna, Sirajgonj Dhaka, Chittagong and Feni districts. Fishes are caught from the rivers, and the major part comes from the culture ponds.

Huge quantity of small fishes are caught from the beel during the peak season. Due to the lack of proper preservation and transportation system, the aratdars are not interested to buy these fishes, though in centralized markets these fishes have a better market value. These smaller fishes are sundried by the fishers and their family members, and sold in the markets of Sirajgonj, Rangpur and adjacent areas of Rangpur (Ahmed, 1957).

Data of daily landing at each arat, cost and profit of the arats were difficult to assess and however, assumptive data on average daily profit was obtained as Tk. 300-450 during the peak season and Tk. 100-150 during the off season. The arat systems were found to traditional and majority of the fishers were found to be under loan contract with aratdars. In such instances, the fishers are bound to hand over their catch to the money lending aratdars at a less price rate.

Most of the arats were found traditional and the use of water was not hygienic. The fishes were carried in bamboo baskets, which were not properly maintained. Some of the arats have tin roofs and become rising up the temperature inside the arats. All these factors easily spoiled fish.

Mouth of the baskets were covered with gunny bags or banana leaves. The packed baskets were carried to the bus terminal dumped in rickshaw vans. In this way these arats supply fish to different district of Bangladesh. Most of the arats supply fish to the north western districts, a few to the southern parts. The profit of the arats would be increased if they could send fish to other districts, which could have made more profit to the fishers and growers.

From the present research it is revealed that the arats of Singra have potentials to supply a lot of fish to all over the country. But due to the absence of proper storage, preservation and transportation systems the profit level remains less.

CONSTRAINTS

There is a little or no initiative to improve the quality of fish marketed because the demand of fish is always higher than the supply. As a result, fish of any quantity are sold in the market although the traders face serious problems including heavy losses, wastage and poor price. After harvest all the fish passes a number of channels and intermediaries and are transported by road, by trains, by bus, and by boat/launch mainly using bamboo baskets. The loading and unloading at different stages of transportation, long exposure to high temperature, improper use of ice, rough and unhygienic method of handling, contamination and lack of knowledge on quality aspects among the actors involved are main the contributing factors for the quality loss. Due to lack of adequate transportation, storage and preservation facilities, every year a huge quantity of fish cannot be utilized properly. Although no systematic studies were conducted in the past but the available reports suggest that considerable post-harvest losses take place during various stages of handling, transportation and preservation. According to BOBP (1985), about 30% fish landed are marketed fresh (un iced), about 40% iced, 20% sun dried and the remainder is frozen, salted, smoked or made into fish meal. Fresh fish are marketed through various marketing chains: primary, secondary, the higher secondary and consuming market (Coulter and Disney 1987). Rail, road and water transports are used to carry fish to the distant places from landing point and it takes 7-9 days after harvesting which is less than normal shelf life of tropical species if the condition of handling and storage is ideal (Uddin and Das 1994). The most important contributing factors of post-harvest losses are probably associated with rough handling, improper and delayed icing, longer exposure to high temperature, contamination and lack of knowledge on sanitation and personal hygiene.

V. CONCLUDING RECOMMENDATION

It is a common indicator of marketing efficiency is the size of marketing margin which makes a huge gap between the farmed price and consumer level of prices. Some specific suggestions for improving existing marketing system that effect on the food, nutrition as well as export earnings are (a) improvement of transportation, preservation and shipment facilities, (b) establishment of sufficient ice factory adjacent to culture ground, (c) introduction of modern wholesaling and retailing facilities (d) provision for government and private funding assistance and (e) improvement of hygienic conditions of landing centers and markets. It is important that only the public-private relationship can improve the existing system of fish marketing.

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