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DRY FISH MARKETING IN NILPHAMARI DISTRICT OF BANGLADESH

M. S. Monir[1*], M. R. Haque[2] and S. Rahman[1]

[1]Scientific Officer, Bangladesh Fisheries Research Institute, Freshwater Sub-station, Saidpur, Nilphamari-5310
[2]Department of Fisheries Management, Hajee Mohammad Danesh Science and Technology University, Dinajpur 5200, Bangladesh

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ABSTRACT

A study on dry fish marketing was conducted for a period of four months from November 2011 to February 2012 at Nilphamari district to evaluate marketing status, wholesale and retail price of available dried fish sp. Supply of dried fish sp. was found higher (35%) in Thakurgaon and lower (15%) in Dinajpur district from Saidpur wholesale market. About 80% local wholesalers purchased dried fish directly from processors for maximizing profit. Fifty percent local wholesalers stored the products in cement floor while others stored the products in plastic or jute bag. The highest wholesale (BDT 560 kg^{-1}) and retail prices (BDT 600 kg^{-1}) were recorded for *Wallago attu* at November, and the lowest wholesale (BDT 85 kg^{-1}) and retail prices (BDT 95 kg^{-1}) were found for *Puntius* sp. at December. The major constraints facing by dry fish wholesaler and retailers were rapid damage of dry fishes, low consumer demand, lack of accessing credit facilities, poor management skills, lack of marketing infrastructure, and transportation and storage facilities.

Key words: Dry fish, marketing, wholesaler and retailer

INTRODUCTION

Dry fish (*Shutki*), is the most popular food item in Bangladesh. It is the main protein source in many areas including Chittagong, Dhaka, Chandpur, Kuakata, Barisal and northern part of this country. Recently, it is exported abroad where the main consumers are immigrants and worker of the third world country (Bhuiyan *et al*. 2009). The coastal areas, rivers, and several haors are famous for producing dry fish, which is dried under the sun from mid October to mid April. Drying is traditional method, which has been used for centuries for preserving fish (Cole and Greenwood-Barton 1965, Waterman 1976). Traditional drying is often rudimentary, and good hygiene is rarely practiced (Azam 2002). During the rainy season, when humidity levels are high, sufficient drying cannot be achieved using traditional methods. In such conditions, stored dried fish will re-absorb moisture and become susceptible to bacteria, fungal or insect attack (Azam 2002).

Marketing is a link between the producer and consumers. The marketing system operates through a set of intermediaries performing useful commercial functions in a chain formation all the way from the producers to the final consumers. It is reported that fish and fishery products are marketed through many different channels and outlets in Bangladesh (Reza *et al*. 2005). There is a long marketing chain for fresh and processed fish products which include fishermen, purchase commission agents, processor, purchase commission agents, wholesaler, retailer, and finally the consumer. The involvement of large number of middlemen and commission agents ultimately increase the price of the fish products (Ahmad *et al*. 1993, Mazid 1994), where the consumers buy the products at a higher price. Again, superfluous middlemen of the marketing chains in Bangladesh are lessening the profit of fresh/dry fish producers/processors. To improve the existing condition, it is necessary to understand the present status of fish marketing including both fresh and dried forms. Though some works were done on fish drying at different regions of Bangladesh by (Nowsad 2002, Nowsad 2003 and Nowsad 2005, Reza *et al*. 2005) but study on dry fish marketing in the northern region of Bangladesh is very little.

Therefore, the present study was conducted mainly Saidpur dried fish wholesale market as well as other dried fish markets at Nilphamari district of Bangladesh to evaluate the status of dried fish marketing in terms of available species and sources, supply to different districts, marketing channels, price analyses, and existing constraints.

MATERIALS AND METHODS

Study area: The study area was mainly Saidpur wholesale and retail markets as well as other dried fish markets of Nilphamari district. There were three

**Corresponding author: M. S. Monir, Scientific Officer, Bangladesh Fisheries Research Institute, Freshwater Sub-station, Saidpur, Nilphamari-5310, Bnagladesh, e-mail: monir_bau22@yahoo.com*

major dried fish markets in the study area. These are Pouro Bazar of Nilphamari, wholesale and Choto Bazar of Saidpur.

Survey on marketing system and Sampling: The present study was conducted for a period of 4 months (November 2011 to February 2012) on the marketing system of wholesale market and in retail market in the study area. A total of seventeen (17) dry fish species and one shrimp species were selected for the present study. These were Barb (*Puntius* sp.), Baim (*Mastacembalus armatus*), Elongate Glass-perchlet (*Chanda nama*), Ganges river sprat (*Corica soborna*), Shol (*Ophicephalus striatus)*, Razorbelly Minnow (*Salmostoma* sp.), Indian River Shad (*Gudusia chapra*), Hilsa (*Hilsa ilisha*), Tank Goby (*Glossogobius giuris*), Mola Carplet (*Amblypharyngodon mola*), Tengra Catfish (*Mystus* sp.), Ribbon Fish (*Trichiurus* sp.), Spiny Eel (*Macrognathus* sp.), Bombay Duck (*Harpodon nehereus*), Anchovy (*Setipinna* sp.), Snakehead Murrel (*Channa striata*), Freshwater Shark (*Wallago attu*), Chhuri (*Lepturacanthus savala)* and Small Prawn (*Macobrachium lamarrei*). Periodic data were collected at fortnightly intervals from the study areas using a prepared questionnaire. The questionnaire was prepared and pretested at field condition before collecting the final data.

Data analyses: The collected data were tabulated and analyzed by using Microsoft Excel.

RESULTS AND DISCUSSION

Sources of dried fish and markets: Fishes were carried out at Saidpur dry fish wholesale market of Nilphamari district by the dried fish sellers from Khulna, Sylhet, Chittagong, Mymensingh and Chalan Beel water resource in the north-west region of Bangladesh. Two dry fish retail markets having 20 shops were observed adjacent to the wholesale market of Saidpur whereas, in Nilphamari, only a dry fish market was located at Pauro bazar. There are many travelling vendors in the study area who sell dry fishes directly through carrying fishes on bicycle or van/rickshaw.

Supply of dry fishes in different district: Dry fishes were observed to supply mainly from Saidpur wholesale market to Nilphamari, Thakurgaon, Dinajpur and Panchagar districts. The supply of dry fishes from Saidpur wholesale market as well as demand of dry fishes was higher in Thakurgaon district (35%). This might be due to the presence of a small number of water bodies resulting in less fish production than those of other districts. On the contrary, lower supply and demand of dry fishes (15%) were observed at Dinajpur district (Figure 1). However, it might be for available supply of fresh fish in Dinajpur district.

Marketing of dried fish: Marketing system of dry fish is shown in Figure 2. The study showed that there was no specific marketing chain for such fishery products in Bangladesh and the length of the marketing channel varied depending on the place and season of the year. Wholesalers and retailers collected dry fishes through a number of intermediate traders. Wholesalers sometime purchased the dry fishes from commission agents and sold them to the retailers and the products ultimately reached its final destination, the consumers. During the study period, it was observed in some cases that the retailers collected the dry fishes from the processors for maximizing their profit.

Market status of dry fishes: Studies were conducted on local wholesale market of dry fishes at Saidpur of Nilphamari district (Table 1). The table showed that 80% of the local wholesalers purchased dry fishes directly from processor of Khulna, Sylhet, Chittagong, Mymensingh and Chalan Beel water resource of the north-west region of Bangladesh to ensure maximum profit from their business and rest of the local wholesalers bought the products from wholesalers. Forty percent of the local wholesalers started dry fishes business 16 years ago whereas 5% has business experience of below 2 years. The study also revealed that few people are now getting involved with this business in this part of the country. Most of the wholesalers (70%) had an idea about the production technique of traditional dry fish products, while the rest had no idea about the production procedure. The results also showed that 60% of the wholesalers did not take any protective measures to ensure the quality of the dry fishes during the wholesaling period whereas, only 15% wholesalers took measures by re-drying the fish in the sun to keep the product in good condition until the stock was finished. In terms of the storage technique, most of the wholesalers (50%) stored the products in cement floor whereas others stored the product in plastic or jute bag. The products were usually stored without any package. As a result, in tropical country like Bangladesh, where the relative humidity is high almost all the year round, the products absorb moisture from the environment increasing the water activity as well as giving the chance of raising bacterial and fungal spoilage during storage.

Price analyses of dry fishes

Wholesale price: Price of the dried fish in the wholesale/retail market was found to be varied on the basis of species, size and quality of the final product. In the study period, the highest wholesale price was found on November (*Wallago attu*, BDT 560 kg^{-1}) and the lowest wholesale price (BDT 85 kg^{-1}) was recorded for *Puntius* sp. on December (Table 2). The highest price of *Wallago attu* may be due to less supply and more demand than other dried fish sp.

Table 1. Market status of dry fishes at Nilphamari district, Bangladesh

Market/local wholesaler's Information		No. of respondents	Percent
Local wholesaler purchase from	Processors	16	80
	Wholesaler	4	20
Business experience of the retailers (year)	Below 2 year	1	5
	2-6 years	4	20
	7-11 years	2	10
	12-16 years	8	40
	17-21 years	3	15
	Above 21 years	2	10
Storage techniques followed by wholesaler	Stored in wooden box	6	30
	Stored in cement floor	10	50
	Stored in plastic/jute bag	4	20
Opinion about dry fish wholesaling	Profitable	16	80
	Not profitable	4	20
Idea about production technique	Have idea	14	70
	No idea	6	30
Measures taken to keep quality during wholesaling	Exposed to sunlight	3	15
	Sieve	5	25
	No measure	12	60

Table 2. Average wholesale price of the dried fishes at Saidpur wholesale market

Dried fish species	Month-wise average wholesale price (BDT kg^{-1})				
	November	December	January	February	Mean ±SD
Amblypharyngodon mola	180	170	175	190	178.7 ± 8.53
Gudusia chapra	170	160	165	175	167.5 ± 6.45
Mastacembalus armatus	370	360	365	380	368.75 ± 8.53
Trichiurus sp.	210	205	205	200	205 ± 4.08
Mystus sp.	400	390	395	390	393.7 ± 4.78
Harpodon nehereus	260	250	260	265	258.7 ± 6.29
Puntius sp.	90	85	90	100	90 ± 7.07
Setipinna sp.	190	185	200	195	192.5 ± 6.45
Wallago attu	560	510	510	510	522.5 ± 25.00
Hilsa ilisha	250	245	240	260	248.7 ± 8.53
Glossogobius giuris	200	195	195	190	195 ± 4.08
Macrognathus sp.	260	265	260	265	262.5 ± 2.88
Chanda sp.	130	120	120	130	125 ± 5.77
Lepturacanthus savala	260	250	240	260	252.5 ± 9.57
Corica soborna	230	220	215	220	221.2 ± 6.29
Salmostoma sp.	230	220	225	230	226.2 ± 4.78
Macobrachium lamarrei	220	210	210	210	212.5 ± 5.00

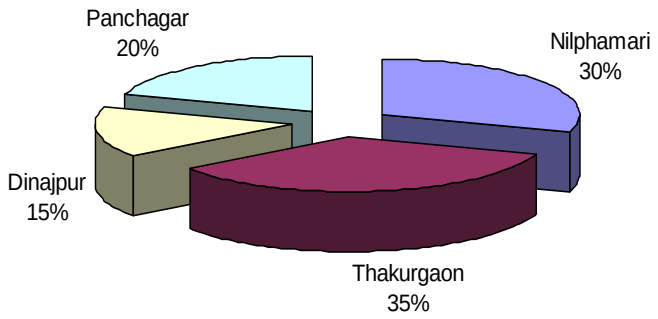

Figure 1. Supply of dried fish from Saidpur wholesale market to different district.

Table 3. Average retail price of the dried fishes at Saidpur and Nilphamari retail markets

Dried fish species	Month-wise average wholesale price (BDT kg^{-1})				
	November	December	January	February	Mean ± SD
Amblypharyngodon mola	210	200	205	215	207.5 ± 6.45
Gudusia chapra	210	205	190	210	203.7 ± 9.46
Mastacembalus armatus	410	380	395	400	396.25 ± 12.50
Trichiurus sp.	240	230	230	220	230 ± 8.16
Mystus sp.	430	420	415	415	420 ± 7.01
Harpodon nehereus	280	260	270	270	270 ± 8.16
Puntius sp.	100	95	100	110	101.2 ± 6.29
Setipinna sp.	210	210	200	210	207.5 ± 5.00
Wallago attu	600	560	580	500	560 ± 43.20
Hilsa ilisha	270	270	260	280	270 ± 8.16
Glossogobius giuris	230	220	220	220	222.5 ± 5.00
Macrognathus sp.	280	270	270	285	276.2 ± 7.5
Chanda sp.	160	150	140	150	150 ± 8.16
Lepturacanthus savala	280	270	260	280	272.5 ± 9.57
Corica soborna	230	220	215	220	221.2 ± 6.29
Salmostoma sp.	230	220	225	230	226.2 ± 4.78
Macobrachium lamarrei	220	210	210	210	212.5 ± 5.00

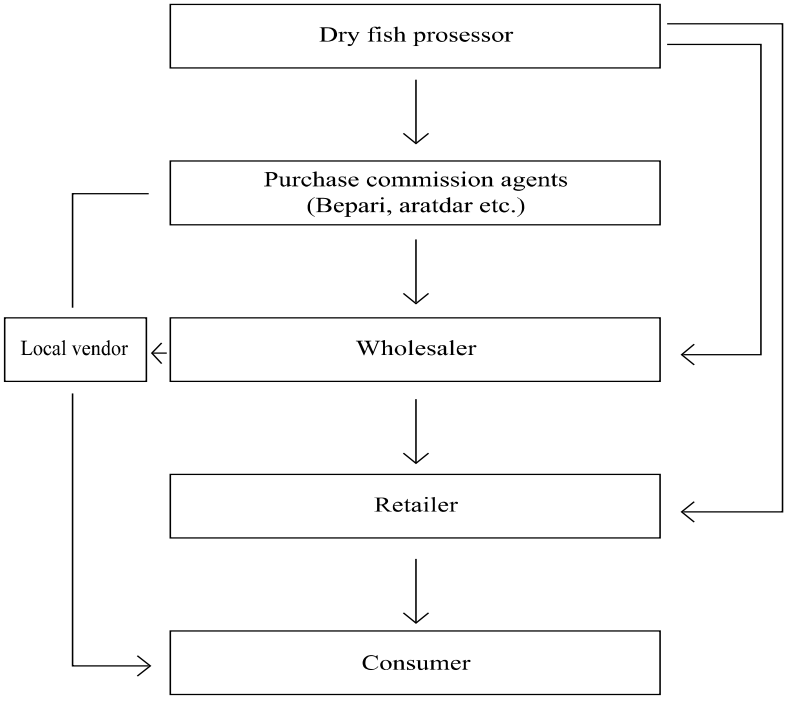

Figure 2. Marketing channel of dried fish of the Saidpur dried fish market.

Retail price: Among the observed dried fishes, the highest retail price (BDT 600 kg^{-1}) was recorded for *Wallago attu* on November whereas the lowest retail price (BDT 95 kg^{-1}) was found for *Puntius* sp. on December (Table 3).

Constraints: By interviewing with wholesalers and retailers it was observed that that the involvement of large number of middlemen and commission agents lessen benefit. During study period, a number of constraints were reported by wholesalers and retailers of dry fish, including rapid damage of dry fishes, low consumer demand, high transaction costs, lack of access to credit facilities, poor management skills, lack of marketing infrastructure, transportation and storage facilities. Small scale wholesalers and retailers in most areas generally face the same kind of constraints (Ahmed *et al*. 1993, Mazid 1994). Azam (2002) reported that in rainy season, when humidity levels are high,

sufficient drying cannot be achieved using traditional methods and in such conditions, stored drying fish will re-absorb moisture. In the study area, it was observed that, re-absorb moisture or raw and dried fishes were kept in the same tent which badly affects the quality of whole dried fishes. Storage in unhygienic condition was also found which usually took place in the tent having no platform.

CONCLUSION

It the study area, it was observed that lack of marketing infrastructure for both wholesale and retail market of dry fish. The involvement of large number of middlemen and commission agents ultimately increase the price of the dry fish products, where the consumers buy the products at a higher price. Different constraints were observed during study period such as rapid damage of dry fishes, low consumer demand, high transaction costs, lack of access to credit facilities, poor management skills, lack of marketing infrastructure, transportation and storage facilities etc. The study revealed vital information on marketing system on wholesalers and retailers of dry fish which will be helpful to identify existing marketing inefficiencies so that the government and private sector can take necessary steps to mitigate the constraints.

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