

Marketing Channel of Dried Marine Fish in the Southeastern Coastal Belt of Bangladesh

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Abstract: The marketing channel of dried marine fish from Kutubdia Island to Chittagong city, Bangladesh was studied during June 2009 to June 2010. Data were collected through questionnaire interviews. The marketing chains from producers to consumers passed through a number of intermediaries: *beparies*, *aratdars*, wholesaler and retailer. Based on a sample of 80 units (producers, *beparies*, *aratdars*, wholesalers and retailers), the highest percentage (70%) dried fish were supplied by processors to *aratdars* at Asadgonj. The price of Rupchanda ranged from BDT 1000-1100/kg, Lakkha BDT 1050-1200/kg, Loyitta BDT 80-220/kg, Churi (small size) BDT 120-180/kg, Fatra BDT 190-300/kg, Surma/Maitya BDT 300-600/kg, Leizza poa BDT 200-350/kg in Kutubdia dry fish centre (producer). Whereas, the retail price of Rupchanda ranged from BDT 1900-2000/kg, Lakkha BDT 1960-1980/kg, Loyitta BDT 320-350/kg, Churi (small size) BDT 220-250/kg, Churi (large size) BDT 600 - 660/kg, Fatra BDT 350-370 /kg, Kamila BDT 350-370/kg at dried fish markets (Asadgonj, ChalkBazar and Bahaddarhat) in Chittagong City. The price was increased nearly double from producer to consumer. During peak season price was lower than that of lean season. Processors and intermediaries faced various problems like inadequate capital, natural calamities, lack of scientific knowledge and technology, price instability, lack of transport facilities, lack of inadequate storage facilities, lack of physical marketing facilities and lack of marketing information.

Key words: Dried Marine Fish • Marketing Channel and Profit Margin

INTRODUCTION

Drying of marine fish is very common coastal activity in the entire coastal areas of Bangladesh and these dried fishes have demand both in domestic and international markets. About 20 percent of total marine catch has been dried round the year and marketed both in domestic and international markets [1].

In the coastal belt, fish drying generally starts in October and ends in March. In some coastal villages, it starts sporadically in early September and lasts till the end of May [2]. The product of dried fish is easily transportable, marketable and storable [2]. Bangladesh has exported 341 MT of dried fish during 2008-2009 fiscal year whose market value was BDT 119.9 million [3]. The major species which were used for drying as Rupchanda (*Stromateus chinensis*), Churi (*Trichiurus hawmela*), Poa

(*Johnius belageri*), Kamila (*Congresox talabonoides*), Loittya (*Harpodon nehereus*), Lakkha (*Polynemus indicus*), Maitya (*Scomberomorus guttatus*), Fatra (*Raconda russellina*), Shrimp (*Penaeus spp.*), Sada Datina (*Pomodasyus hasta*), marine Cat fish (*Arius gogora*), Tailla (*Eleutheronema tetradactylun*), chowka faisha (*Ilisha megaloptera*). Available report suggested that in Bangladesh, fish and fishery products marketed through many different channels and outlets [4]. The fish market structure varies from area to area [5], but in general terms it can be four types *viz.* primary, secondary, higher secondary and final consuming market. Dried fish usually come to Chittagong from all dried fish processing area of Bangladesh like Rangabali, Kuakata, Banshkhali, Moheshkhali, Cox's Bazar, Noakhali, Chandpur etc. These dried fish later supplied to Chittagong hill tracts market, Sylhet market, Dhaka market, Comilla market,

Syedpur market, Mymensingh market. Dried fish have also exported to United Kingdom, United States of America and United Arab Emirates [6]. However, the largest dry fish market (Asadgonj) of Bangladesh market is situated in Chittagong city.

The present study was conducted to know the marketing channel of dried marine fish in the Chittagong coastal belt of Bangladesh.

MATERIALS AND METHODS

The present study was conducted for a one year from June, 2009 to May, 2010 and primary data were collected from the dried fish producer/ processors of Kutubdia Island and dried fish traders of Chittagong. The selection of the area for this study was made on the basis of concentration of marine fish drying and processing. Target groups were dried fish processor, *bepari*, *aratdar*, whole sellers and dried fish retailers.

Primary data were collected by face to face interview. Secondary data were collected from various sources viz., various books of DoF, BFDC etc. The dried marine fish producer/processors were interviewed at their plants whereas the traders were interviewed at the markets. For questionnaire survey, fish retailers were selected through simple random sampling method. Interviews were conducted at the market during marketing time. Retailers took part in fish selling activities as a result there was a scope to observe the marketing activities. Cross-check interviews were conducted with key informants such as president and secretary of Asadgonj dry fish market association.

After data collection the data were edited for analysis. In order to minimize error, data were collected in local units and later local units were converted into standard units and the data were transferred to the

tabulation sheet. Cost and margin were calculated and presented in the form of tables. Data were processed and finally analyzed using MS Excel-2007.

RESULTS AND DISCUSSION

The marketing system was operated through a set of intermediaries performing useful commercial functions in a chain formation from producers to the final consumers. Five functionaries were found to be involved in marketing of dried fish in the study area. They were producers/processors, *beparies*, *aratdars*, wholesalers and retailers (Fig. 1).

Ara *et al.* [7] found two marketing channel of capture fishery in Khulna district, all of which involved *aratdars*, *paikers* and retailers. However, Samad [8] reported five marketing channel of dried fish marketing in Chalan beel area. Shamsuddoha [1] also found intermediaries like wholesalers, *Aratdars*, middlemen and retailers in Cox’s Bazar. Bishwas [9] found similar findings as the present study in the survey of dried fish marketing from Cox’s Bazar to Dhaka. The author found six marketing channel, all of which the above intermediaries were involved in dried fish marketing.

Producers/Processors: Producers carried 70% of their dried fish to Asadgonj dry fish market. They have also sold other portion of dried fish to *beparies* (22%), retailers (6%) and consumer (2%). Processors bought per basket (60 kg) fresh fish from fisher folk of Kutubdia. They bought 10 basket fresh fish at a rate of different amount of money depending on the variation of species. For example for Loittya fish this amount was Tk 9000 per 60 kg. The processing cost amount to BDT 900 per lot/mound (60 kg) including cost of drying racks, labor and means of preservation. Mainly salt is used against

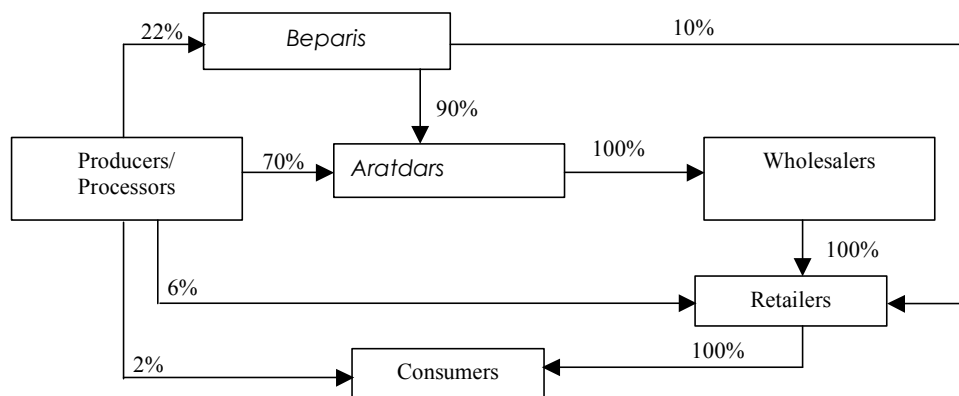


Fig. 1: Marketing channels of dried marine fish in the study area

insect infestations. According to them, chemicals DDT and Nogos were used rarely. This findings was similar to Shamsuddoha [1] reported that producer sold 60 of their dried to *beparies* and remaining 40% to commission agent (*paikers*). Ahmed [2] also reported that producer sold their some of dried fish to mobile assembler who might be known as *mahajan / jogandar / faria*. Bishwas [9] also found the similar findings of dried fish processors of Cox's Bazar districts where processor carried 60 % of their dried fish to Asadgonj dry fish market.

Beparies: *Beparies* were relatively large professional traders in the study area. They bought dried marine fish from producers/ processors at Kutubdia primary market and sold it (90%) to the wholesalers of Asadgonj through *aratdar* at Asadgonj dry fish market on payment of commission and 10% in Chakaria retailers. They did not have permanent business payments and they worked in group. In Kutubdia there were 7-8 parties of such *beparies* and each party there were at least 5-8 members. They usually hired the laborers. Most of the *beparies* in dried marine fish marketing were seasonal traders. Some local *beparies* were also found to buy dry fish from processors and sold it to retailers of Kutubdia Bazar, Chakaria Bazar, Pekua Bazar and Lohagara Bazar. Bishwas [9] found the similar findings at Cox's Bazar district.

Aratdars: In the study area *aratdars* were found at Asadgonj dry fish market in Chittagong. Generally *aratdars* were self-financed. *Aratdars* received commission at the rate of BDT 5/kg dried fish which price was less than BDT 200/kg and BDT 6/kg which price was more than BDT 200/kg. There were 36 *aratdars* found in dried marine fish related business including salted dehydrated fish. The *aratdars* often gave advance loan to the *beparies* and processors in the study area on condition that they have to sell dried marine fish through them and the *aratdars* took commission at the rate BDT 1 more per kg dried marine fish than normal rate. Each *aratdar* gave advance loan to the *bepari* and processor around BDT 150000-200000 per season. According to *aratdars* dry fish have also come from every dry fish yard of the country like Rangabali, Kuakata, Banshkhali, Moheshkhali, Cox's Bazar, Noakhali and Chandpur etc. Dry fish also come from abroad like India, Myanmar to this market. About 20 MT dried fish landed daily in this market.

It was observed that there were 36 *aratdars* and 240 wholesalers at Asadgonj dried fish market in Chittagong whereas *aratdars* received commission BDT

5/6 from producers and *beparies*. This finding is similar to the investigation by Kleih *et al.* [5] where they found 24 *aratdars* who took 2% commission per transaction. However, Bishwas [9] found 25 *aratdars* in Cox's Bazar. Ahmed [2] also find similar result in dried fish market of coastal part of Bangladesh where they found that *aratdars* gave advance loan to the dried fish buyers and processors and take commission of 3-6 % during selling of dried fish.

Wholesalers: In the study area wholesalers purchased dried fish from *aratdars* only. During the study period there were 240 wholesalers found at Asadgonj dry fish market. 90% wholesalers of Asadgonj dry fish market acted as retailers also [Pers. Communi.]. They had some part-time or full-time salaried persons for performing various functions such as loading, unloading, weighing, grading. There were 10,000 kg dried fish had sold daily in this market. From the wholesalers, dried fishes are supplied to the other districts of our country viz. Chittagong hill tracts market, Sylhet market, Dhaka market, Comilla market, Syedpur market, Mymensingh market etc. Dried fishes are also exported to United Kingdom, United States of America and United Arab Emirates.

Kleih *et al.* [6] found 200 wholesalers in Asadgonj dried fish market. In this study the numbers of *aratdars* and wholesalers were more than the period of 2003. This variation might be the cause of variation in time.

Retailers: Retailers are the end link in the channel of dried marine fish marketing. They had permanent shops usually situated at crowd areas of Chittagong retail market of ChalkBazar, Bohaddarhat. They purchased dried fish from wholesalers of Asadgonj dry fish market and sold it to the consumers. The retailers cum wholesalers of Asadgonj dry fish market also sold dried fish to the consumers. In every retail shops of Asadgonj, there were 2 to 3 employers found for selling dried fish.

Pricing: The market price is the result of interaction of supply and demand forces as it sets at point where the price asked by sellers equal that offered by buyers. Demand, supply and quality of dried marine fish influence the price. There is no actual pricing system in primary market and retail markets. There was pricing system of whispering bidding shown in Asadgonj dry fish market where wholesalers bought dried marine fish from *aratdars*. The price of dried marine fish depends on species, size of species, market and seasons.

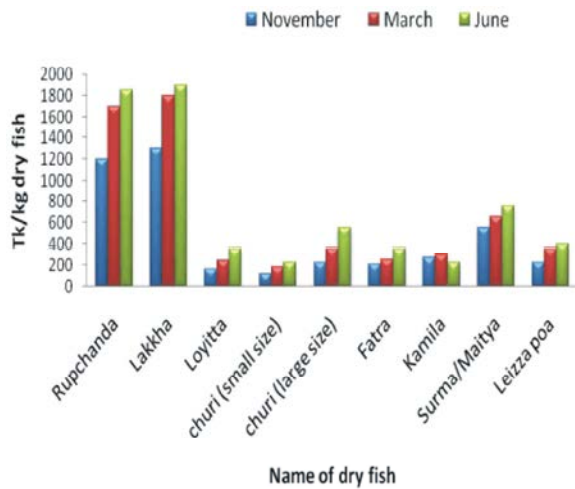


Fig. 2: Price of dried fish at processing yard

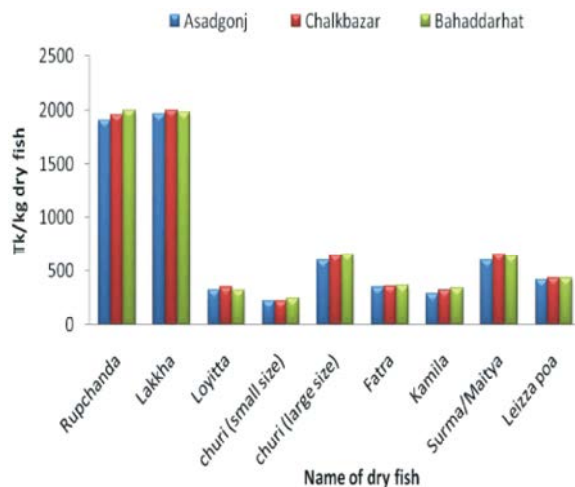


Fig. 3: Price of dried fish at whole sale market

The price of dried marine fish was minimum in winter season and rising up to the maximum in the lean season. During the study period in Kutubdia dried fish processing yard the price of some selected dried marine fish were following: Rupchanda ranged from BDT 1000-1100/kg, Lakkha BDT 1050-1200/kg, Loyitta BDT 80-220/kg, Churi (small size) BDT 120-180/kg, Fatra BDT 190-300/kg, Surma/Maitya BDT 300-600/kg, Leizza poa BDT 200-350/kg (Fig. 2).

During the study period in Chittagong the price Rupchanda ranged from BDT 1200-1850/kg, Lakkha BDT. 1300-1900/kg, Loyitta 160-350/kg, Churi (small size) BDT. 120-220/kg, Churi (large size) BDT 220-550/kg, Fatra BDT 210-350/kg, Surma/Maitya BDT 550-750/kg, Leizza poa BDT 220-400/kg (Fig. 3). Meanwhile, a study was conducted in Kuakata, Sundarban and Coxs Bazar area during 2005-06 and found similar findings of price of dried

fish where Churi ranged from 60-80 BDT/kg, Loityta 60-70 BDT/kg, Rupchanda 300-350 BDT/kg, Lakkhua 200-250 BDT/kg, Fatra 50-60 BDT/kg [2]. Kleih *et al.* [6] conducted a study during 2001-02 and he found that the price of Bombay duck ranged from 65-100 BDT/kg, Shark 65-90 BDT/kg, Shapla Pata 28-55 BDT/kg, Suna Bain 50-80 BDT/kg. Quddus [10] reported that price during harvesting season came down to the minimum and started rising up to the maximum in the off season. The variation of prices might be varied due to seasonal variation and availability of fishes.

Marketing Cost and Margin: In dried marine fish Marketing, the nature and types of cost at different stages in the marketing process were not identical due to the dissimilarities of marketing function at various stages. The processing cost including raw material cost of dried Pomfret, Indian salmon, Bombay duck, Ribbon fish (small size), Indian piker, Spanish mackerel and Big eye croaker were 88.6 %, 81.8 %, 77.19 %, 65.07 %, 81.88 %, 85.8 % and 89.92 % respectively (Table 1). Again the marketing cost of dried Pomfret, Indian salmon, Bombay duck, Ribbon fish (small size), Indian piker, Spanish mackerel and Big eye croaker were 0.87 %, 0.88 %, 10.98 %, 8.34 %, 4.85 %, 4.95 % and 1.93 % respectively. While the profit margin of processors for dried Pomfret, Indian salmon, Bombay duck, Ribbon fish (small size), Indian piker, Spanish mackerel and Big eye croaker were 10.52 %, 17.33 %, 11.83 %, 11.83 %, 13.15 %, 12.27 % and 5.23 % respectively (Table 1).

It was found that the processing cost of selected dried marine fish was BDT 13.33 per kg. The marketing cost of dried fish was BDT 11.43 per kg which included toll at Ghat, boat fare, labor cost, Aratdar commission etc. Ara *et al.* [7] found that the total marketing cost of the fishermen was BDT 405.0 per quintal for capture fishery in beel Dakatia.

The net profit of producers/processors of the selected dried marine fish were BDT 11.24 for Bombay duck, 33.24 for dried Ribbon fish (small size), BDT 10.24 for Leizza poa, BDT 65.23 for dried Spanish mackerel, BDT 125.24 for Pomfret, BDT 225.24 for Indian salmon and BDT 30.24 for Indian piker. These variations might be due to the variation in production and marketing cost. Samad *et al.* [8] reported that the involvement of large number of middlemen and commission agents reduce benefit to the fish producers. However, Afroz [11] reported that the fish retailers' average profit in Mechua Bazar, Natun Bazar and Railway market in Mymensingh town was estimated at BDT1350, BDT1050

Table 1: Profit margin of dried fish processor

Species	Purchase of raw materials and Processing cost*		Marketing cost		Total cost		Selling price in wholesale market		Profit margin for dried fish processors	
	BDT/kg	%	BDT/kg	%	BDT/kg	%	BDT/kg	%	BDT/kg	%
Pomfret	1063	88.6	10.83	0.87	1074.76	89.48	1200	100	125.24	10.52
Indian salmon	1063.33	81.8	11.43	0.88	1074.76	82.67	1300	100	225.24	17.33
Bombay duck	73.33	77.19	10.43	10.98	83.76	88.17	95	100	11.24	11.83
Ribbon fish (small)	81.33	65.07	10.43	8.34	91.76	73.41	125	100	33.24	11.83
Indian piker	188.33	81.88	11.43	4.95	199.76	86.85	230	100	30.24	13.15
Spanish mackerel	463.33	85.8	11.43	1.93	474.76	87.73	540	100	65.23	12.27
Big eye croaker	193.33	89.92	11.43	4.85	207.76	94.77	215	100	10.24	5.23

*Processing cost includes fixed cost of drying racks, labor cost, salt, medicine etc. Marketing cost includes toll at Kutubdia and Chittagong ghat, boat fare, labour cost for carrying, aradar commission etc

and BDT600 per day respectively. Kleih *et al.* [6] found that the processing cost of dried Bombay duct was 12.50 BDT/kg, marketing cost 5 BDT/kg and net income 10.54 BDT/kg where dried fish came from Kuakata to Asadgonj dried fish market in Chittagong. Moreover, Rahman [12] found the average net profit of a fish retailer in Gazipur Sadar market as BDT 325 per day, while for Sripur market it was BDT 175 per day.

Dried marine fish processors and intermediaries faced various problems in the study area. The reported problems were inadequate capital, natural calamities, lack of scientific knowledge and technology, price instability, lack of transport facilities, lack of inadequate storage facilities, lack of physical marketing facilities, lack of marketing information etc. high marketing cost was due to mainly to the functional inefficiency in the marketing system. The producers/processor's share of the wholesale price was not low and this can further be increased by improving marketing facilities and eliminating unnecessary and inefficient and exploitative middlemen from the marketing channel. Measures were also suggested to improve situation. Fisheries sector plays an important role in the socioeconomic development of Bangladesh contributing 3.74 % of GDP [13]. Fish alone contributed about 58 % of the nation's animal protein requirement during 2008-2009 [14-16]. As dried fish contains high amount of protein, the Government should take initiative for further development of this sector e.g., establishment of modern and healthy techniques of drying fish, quick transportation system and policies related to reducing the number of intermediaries.

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