

FISH MARKETING SYSTEM AND SOCIO-ECONOMIC STATUS OF AROTDARS (COMMISSION AGENTS) IN NORTH-EASTERN PART OF BANGLADESH

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ABSTRACT

The present study was conducted to identify the existing marketing system, availability of fish species and socio-economic status of Arotdars in Moulvibazar Sadar, Shreemongal and Kulaura from the period of January 2017 to December 2017. Highest amount was exotic fishes (67.49% in Kulaura to 70.46% in Shreemongal), lowest was small indigenous species (0.42% in Moulvibazar Sadar to 0.59% in Kulaura). The highest landing was 832841.43kg/yr (*H. molitrix* in Shreemongal), on contrary the lowest landing was 1284.14kg/yr (*X. cancila* in Moulvibazar Sadar). The highest price was varied from 5.39±0.18USD/kg (*Sperata aor* in Kulaura) to 0.78±0.47USD/kg (*Pangasius sutchi* in Shreemongal). Total marketing cost was 0.2779USD/kg and net margin was ranged from 0.167-0.194USD/kg. Education status of majority (54.55% in Moulvibazar Sadar) commission agents were Class VI-X but others (36.36% in Shreemongal to 45.45% in Kulaura) were not educated they only can sign. Major secondary occupations of the aratdars (45.45% in Moulvibazar Sadar) were business bur others (72.73% in Shreemongal to 81.82% in Kulaura) had no alternative professions and earn. They earned more than Tk.900 per day. About 63.64% Arotdars in Moulvibazar Sadar were rich but in Shreemongal (54.55%) and Kulaura (63.64%) were middle class. Majority (18.18 % in Shreemongal to 45.45% in Moulvibazar Sadar) earned Tk.100-200 per day as an alternative income source but in Kulaura had not any alternative source. A number of drawbacks were identified. Development of storage facilities, improvement of fish transport facilities, introduction of fish quality control measures were suggested to improve the fish marketing in the study area.

KEY WORDS: landing, Market margin, Marketing cost, pricing, Species composition, Socio economic status of Arotdars, Sources,

INTRODUCTION

Fisheries are one of the major components of agricultural activities, playing a significant role in nutrition, employment, income generation, foreign exchange earnings and in the economy of Bangladesh as a whole. Apart from marine fisheries, inland fisheries are also very important source of animal protein. About 97% of this production is marketed internally for domestic consumption while the remaining 3% exported to the foreign (Rahman *et al.*, 2009). Flowra *et al.* (2013), found that fisheries development depends on improved production and processing technology and also on effective marketing system. Fish passes through various market participants and exchange points before they reach the ultimate consumers. This is a chain of various systems involved in marketing from production sector to consumer sector with intra-linkage and inter-linkage. 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 (Alam *et al.*, 2010; Rahman *et al.*, 2012). Every handling cost will not amount much but the sum total of all loading can be significant, depending on the length of chain (Ali *et al.*, 2008). Socio-economic status of the people involved in fish related activities depend on the fisheries resource and marketing system. Marketing of fish makes significant contributions to economic growth through generating employment, providing socio-economic support and poverty alleviation. So fishing group is an important community to enrich economics of Bangladesh.

The Arotdar is the commission agent, a class that they are in some cases extremely ignored socially and economically (Flowra, 2012). The socio economic condition of Arotdars largely influence by number of factors including daily income, alternative income, secondary occupation, economic status, memberships of any organization etc. So if identify socio-economic condition then we can determine the present status of Arotdars. Goon *et al.* (2012) stated that the information on the livelihood status of Arotdar will be helpful for making any development decision for fish market

and other fisheries sector. So, it is necessary to know about the socio-economic status of Arotdar for the development of marketing strategy. But there is a huge lack in detail study in the studied region. The present inquiry was initiated to sources of fish in different area, review socio-economic status of Arotdar (commission agent) with identify sources of income; assess their current distribution and assess current consumption of fish with other food items and to identify problems faced by the intermediaries in fish marketing and to suggest for improving fish marketing system.

MATERIALS AND METHODS

Fish markets of Moulvibazar district were selected as an area of study. In Moulvibazar district, there are seven Upazilla among which three Upazilla that is Moulvibazar Sadar, Shreemongal and Kulaura were randomly selected. Among ten fish markets, data were collected from six major fish markets (two fish markets of each Upazilla). There were Poschim Bazar/Gobindroshree Bazar, T.C. market (Moulvibazar Sadar positioned 24.3095° N, 91.7315° E); Notun Bazar, Hazipur Bazar (Shreemongal positioned 24.3010° N, 91.6955° E); Uttar Bazar, Dhakkin Bazar (Kulaura positioned 24.5255° N, 92.0347° E). The data were collected from the period of January 2017 to December 2017. A total number of 113 fish marketing intermediaries were selected and were interviewed throughout the period of study. About 18 Producers from farm, 33 Arotdars (commission agent) from Arot, 44 Paiker/Beparis, 36 Retailers and 30 Consumers from different areas of Moulvibazar Sadar, Shreemongal and Kulaura were randomly selected. For the present study, physically market visit and questionnaire based interview methods were used for data collection. The collected data were verified to eliminate all possible errors and inconsistencies. For processing and analysis purpose software Microsoft® Excel 2007 have been applied. One way Anova through SPSS followed by DMRT was used for comparing the socio- economic status of Arotdars between three different upazillas of Moulvibazar district.

Marketing margin is the difference between the price paid by consumer and that received by the producers and was calculated using the following formula-

Gross margin = Selling price - purchase price;

Marketing cost = Labor cost + transportation cost + storage cost etc.;

Net margin = Gross margin – marketing cost.

RESULTS AND DISCUSSION

Structure of fish markets: The season of fish trading was year round. Arotdars of Poschim Bazar/Gobindroshree Bazar (Moulvibazar Sadar), Notun Bazar, Hazipur Bazar (Shreemongal) were engaged in auctioning from 8:00AM to 11:00 AM and retailers were involved for trading from 11:00 AM to 8:00PM, while in Uttar Bazar (Kulaura) Arotdars were engaged from 9 AM to 4 PM for auctioning but biggest auctioning occur between 2 PM to 4 PM and retailers were involved for trading from 9 AM to 07:00 PM. In Dhakkin Bazar (Kulaura) and T.C. market (Moulvibazar Sadar) trading were conducted from 10 AM to 8 PM. It was found that almost all retailers of Poschim Bazar (Moulvibazar Sadar), Notun Bazar (Shreemongal) and Uttar Bazar (Kulaura) markets spent 8-10 hours for fish selling if sufficient fishes were available. Infrastructure facilities of the surveyed three upazilla's markets were found to be in a poor shaped and appeared to be generally inadequate for handling of fish. The findings are shown in Table 1.

Table 1 Comparative study of key information in the surveyed fish markets

Market Characteristics	Moulvibazar	Shreemongal	Kulaura
Area (decimal)	22	27	18
No. of retail shop	62	78	46
No. of arot	17	21	11
Quantity of fishes	Large amount	Comparatively huge	Relatively low
Platform	Cemented	Cemented	Cemented
Roof (shade)	Tin shade	Plastic paper, Tin, bamboo slits	Tin shade
Drainage system in Arot	Present but not developed	No drainage system	Present but not properly worked
Water supply	Present (tube well)	Present (tube well)	Pond water
Ice facility	Available	Available	Absent
Sanitation	Present but not satisfactory	Very poor	Very poor
Electricity supply	Present	Present	Absent

Sources, supply and other facilities:

A remarkable amount of fishes were caught from river, canal, beel, haor, pond, swamp and floodplain of local areas and also South, South-west areas that brought to the fish markets by the interference of Paiker/Beparies. Flowra *et al.* (2013) found same result in Natore and Rajshahi. The transportation systems of fish at markets of three surveyed Upazilla are presented in figure 1. After catching, fishes were transported in the market by different vehicles such as train, bus, truck, pick-up, tampoo, rickshaw, cycle, van, tomtom, and thelagaree. But it was unfortunate that there were no organized transportation system in studied areas. Rokeya *et al.* (1997) and Flowra *et al.* (2013) found same problem in Rajshahi and Natore region. For that reason packaging and preservation had done by different kinds of bamboo baskets, plastic baskets, leaves, banana leaves, polythene bag or plastic bag, Styrofoam box, plastic drum etc.

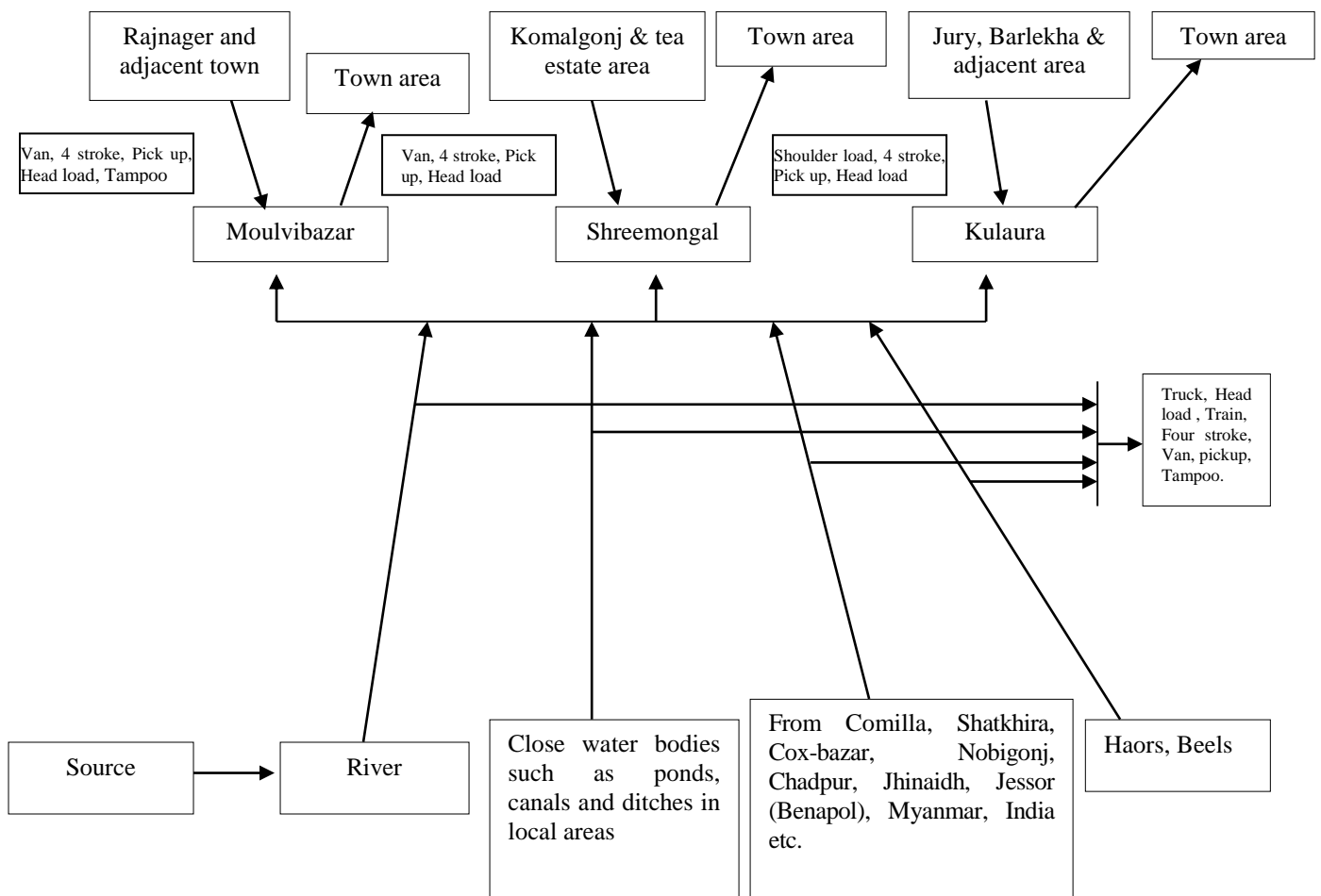


Fig. 1 Sources and transportation of fish from surveyed fish markets

The daily supplies of fish in Moulvibazar Sadar, Shreemongal and Kulaura fish markets are presented in figure 2. In study areas most of the fishes (90%) were come from the local areas and rests (10%) were come from outside (India and Myanmar). Present study finds concordant results reported by Flowra (2012). Siddque (2001) also found that in

Mymensingh markets, fishes were imported from Myanmar and India. Especially Indian major carps are larger sizes. In three major fish markets, highest amount was exotic fishes (67.49% in Kulaura to 70.46% in Moulvibazar Sadar) and lowest was small indigenous species (0.42% in Moulvibazar Sadar to 0.59% in Kulaura).

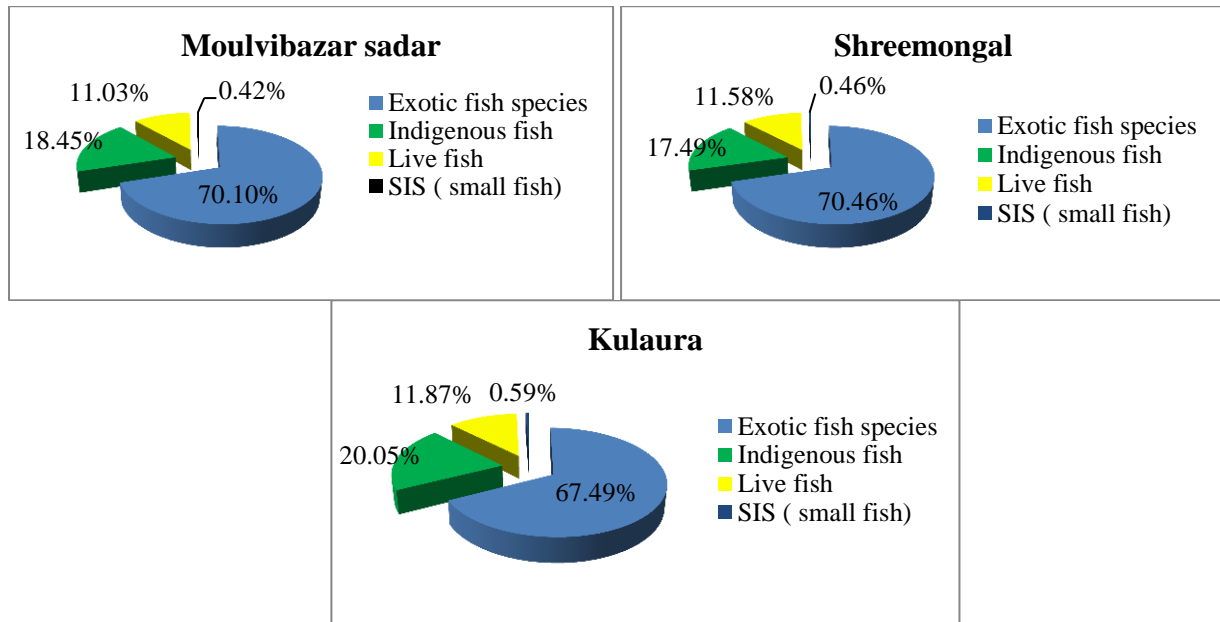


Fig. 2 Supplies of fishes at different fish market in surveyed areas

Landing, pricing and marketing margin of fish in three different upazilla's :

Among the three upazilla's fish market, the highest landing was 832841.43 kg/yr (*H. molitrix* in Shreemongal) however the lowest landing was 1284.14 kg/yr (*X. cancila* in Moulvibazar). The highest landing was found in Shreemongal bazar because of Balla beel, Sixty two beel and several beels were situated near Shreemongal, which is the main source of fishes. The highest price was 5.39±0.18USD/kg (*Sperata aor* in Kulaura) on contrary the lowest price was 0.78±0.47USD/kg (*Pangasius sutchi* in Shreemongal). The price of small fishes and also other fishes varies according to the season of the year with marketing cost because during winter season most of the beels and ponds were dried up by Pump machine for selling all fishes at a time. Market price of fish was not always constant i. e. when the supplies of fishes were high then the price of fishes were dropped and when the supplies of fishes were low the price increase (Flowra *et al.* 2012). Flowra *et al.* (2000) worked on the relative importance of four commercial fishes and prawns of the North-West Region (NWR) of Bangladesh in relation to landing and price. Average landing and price of different fish species are presented in Table-2.

US\$ 1 = 83 BD Taka during study period.

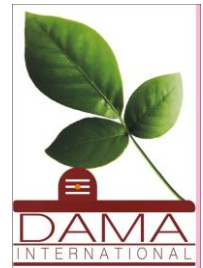
The average marketing cost of producer, Arotadar, Paiker and Retailer were calculated as 0.12±0.0034 USD/kg, 0.018±0.0035 USD/kg, 0.136±0.0059 USD/kg, 0.0039±0.0025 USD/kg respectively. Total marketing cost was 0.2779 USD/kg and net marketing margin was ranged from 0.167-0.194 USD/kg (1 USD = 83 BD Taka during study period). The present study revealed that the price of fish was varied according to different stages of marketing process from producer to consumer by the involvement of various intermediaries. Ali *et al.* (2014) discovered that the average marketing cost ranged from 4.15% to 8.33% (6.76±0.98) % of the final retail price in Barisal region. Rahman *et al.* (2009) reported that the marketing margin was ranged from 20-25 % in Khulna and Swarighat (Dhaka) as 15-20% (Alam *et al.*, 2010). Ali *et al.* (2008) conducted a study on the economic analysis of fresh fish marketing and found marketing margin of 38.38 per cent. 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).

Table 2: Average landing and price of different species in three Upazilla's fish market

Species	Moulvibazar Sadar		Shreemongal		Kulaura	
	Landing Kg/year	Avg price USD/kg	Landing Kg/ year	Avg price USD/kg	Landing Kg/ year	Avg price USD/kg
Exotic fish species						
<i>Hypophthalmichthys molitrix</i>	762588.52	1.28±0.27	832841.43	1.30±0.19	673926.51	1.35±0.11
<i>Aristichthys nobilis</i>	629956.23	1.19±0.11	618450.45	1.22±0.09	528416.34	1.25±0.12
<i>Cyprinus Carpio var. communis</i>	343669.54	1.05±0.15	315441.48	1.43±0.22	251345.65	1.36±0.27
<i>Cyprinus Carpio var. specularis</i>	194657.58	1.27±0.91	212974.67	1.24±0.79	172645.75	1.38±0.14
<i>Ctenopharyngodon idella</i>	514217.41	1.52 ±0.43	494241.54	1.54±0.19	398454.57	1.59±0.17
<i>Puntius gonionotus</i>	148266.84	1.63±0.21	139540.48	1.66±0.10	117457.78	1.73±0.14
<i>Oreochromis niloticus</i>	757425.65	1.74±0.37	792648.58	1.40±0.42	631756.89	1.45±0.37
<i>Clarias gariepinus</i>	25145.85	0.86±0.14	31658.56	0.79±0.10	25472.71	0.91±0.15
<i>Pangasius sutchi</i>	728061.61	0.91±0.50	815121.36	0.78±0.47	671854.49	0.99±0.45
Total (Kg/year)	4103989.23		4252918.6		3471330.7	
Indigenous fish						
<i>Labeo rohita</i>	411748.27	2.39±0.19	473486.32	2.38±0.17	348945.66	2.46±0.17
<i>Catla catla</i>	325568.51	2.46±0.27	311547.48	2.46±0.17	254214.35	2.54±0.24
<i>Cirrhinus cirrhosus</i>	283500.47	2.22±0.16	214715.57	2.20±0.01	178648.65	2.25±0.13
<i>Labeo calbasu</i>	28634.29	3.54±0.31	23512.82	3.51±0.38	214871.25	3.76±0.25
<i>Labeo gonius</i>	21542.36	2.19±0.07	21256.41	2.22±0.13	19751.28	2.23±0.12
<i>Sperata aor</i>	9424.81	5.32±0.27	11204.11	5.04±0.17	14841.95	5.39±0.18
Total (Kg/year)	1080418.71		1055722.7		1031273.1	
Live fish						
<i>Heteropneustes fossilis</i>	17845.47	3.76±0.21	19295.41	3.87±0.31	21284.84	3.91±0.35
<i>Clarias batrachus</i>	14572.28	3.89±0.28	18272.71	3.89±0.40	20954.62	3.98±0.32
<i>Ompok pabda</i>	5681.12	4.64±0.78	6122.42	4.16±0.98	7294.24	4.91±0.89
<i>Mystus vittatus</i>	7175.15	3.54±0.24	8281.45	3.53±0.18	7482.35	3.72±0.29
<i>Anabas testudineus</i>	481312.57	2.13±0.65	524128.54	2.12±0.63	431722.75	2.21±0.51
<i>Channa punctatus</i>	24171.35	2.28±0.12	23576.28	2.29±0.15	27584.48	2.44±0.25
<i>Channa striatus</i>	28245.41	2.19±0.62	29855.54	1.98±0.47	27303.25	2.08±0.65
<i>Wallago attu</i>	65171.42	3.86±0.46	67241.29	3.84±0.36	64714.43	3.52±0.29
<i>Pangasius hypophthalmus</i>	1837.4	3.75±0.58	2462.83	4.77±0.58	2143.65	5.13±0.38
Total (Kg/year)	646012.17		699236.47		610484.61	
SIS (small fish)						
<i>Puntius sophore</i>	9250.8	2.06±0.53	10514.9	2.07±0.56	11461.9	2.11±0.33
<i>Amblypharyngodon mola</i>	2135.34	2.01±0.28	2572.41	1.96±0.11	2974.5	2.08±0.15
<i>Glossogobius giuris</i>	6272.71	2.97±0.36	6941.4	2.99±0.16	7262.72	3.09±0.16
<i>Colisa fasciata</i>	3246.1	2.29±0.17	3618.6	2.23±0.44	3413.84	2.34±0.34
<i>Xenentodon cancila</i>	1284.14	4.99±0.70	1649.1	4.97±0.65	1972.36	5.13±0.44
<i>Esomus dendricus</i>	2156.25	1.94±0.17	2742.23	1.91±0.13	3253.64	1.96±0.19
Total (Kg/year)	24345.34		28038.64		30338.96	
Grand total (M. ton/year)	5854.77 MT		6035.92MT		5143.43MT	

Table 2 Socio economic status of Arottdars at three different Upazilla in Moulvibazar district

Item	Different Bazar			P value
	Moulvibazar Sadar	Shreemongal	Kulaura	
Family size				
2-3	27.27%	0	9.09%	0.029**
4-6	54.55%	45.45%	27.27%	
7-9	18.18%	27.27%	45.45%	
9-above	0	27.27%	18.18%	
Educational status				
Illiterate	0	9.09%	9.09%	0.044**
Can sign only	18.18%	36.36%	45.45%	
Class I-V	9.09%	27.27%	18.18%	
Class VI-X	54.55%	18.18%	27.27%	
Class XI-Above	18.18%	9.09%	0	
Health service (Concerned by Arottdars)				
Upazilla hospital	0	36.36%	72.73%	0.015**
Sadar Upazilla hospital	72.73%	27.27%	18.18%	
Private clinic	27.27%	36.36%	9.09%	
Secondary occupation				
Fish Farmer	27.27%	9.09%	18.18%	0.033**
Business	45.45%	18.18%	0	
not applicable	27.27%	72.73%	81.82%	
Daily income in Tk.				
500-900	0	0	9.09%	0.048**
900-1200	27.27%	36.36%	63.64%	
Above 1200	72.73%	63.64%	27.27%	
Economic status				
Middle	36.36%	54.55%	63.64%	0.891
Rich	63.64%	36.36%	36.36%	
Daily fish consumption				
0.5-1 Kg	0	0%	27.27%	0.005**
1-1.5 Kg	18.18%	27.27%	45.45%	
1.5-2.0 Kg	36.36%	45.45%	18.18%	
2.0-2.5 Kg	9.09%	18.18%	9.09%	
2.5- 3 kg	36.36%	9.09%	0	
Daily meat consumption				
0-0.5 Kg	27.27%	18.18%	18.18%	0.875
0.5-1 Kg	54.55%	54.55%	36.36%	
1-1.50 Kg	9.09%	18.18%	36.36%	
Rarely consumed	9.09%	9.09%	9.09%	
Membership of any organization				
Share market	27.27%	27.27%	9.09%	0.579
Rotary club	9.09%	9.09%	18.18%	
Matcho shamity	18.18%	36.36%	9.09%	
Not applicable	45.45%	27.27%	63.64%	
Alternative income in Tk.				
100-200	45.45%	36.36%	18.18%	0.052**
200-300	27.27%	9.09%	18.18%	
300-400	9.09%	9.09%	0	
400-500	9.09%	9.09%	0	
Not applicable	9.09%	36.36%	63.64%	



Socio economic status:

The socio economic status of commission agents (Arotdars) was still at primary stage showed in studied areas (Table-2). About 33 Commission agents (*aratdars*) in surveyed fish landing centers, data were collected and found most of them were Middle class, illiterate, few and follow the traditional fish business. Analysis of regression showed that Socio economic status i.e family size, Educational status, Health service, Secondary occupation, Daily income, Daily fish consumption and Alternative income of Arotdars were significantly different ($P < 0.05$) between the three different upazilla's fish market in Moulvibazar district but others were not significant ($p > 0.05$).

Mia (1996) found that most of the fish traders were up to secondary level of education. It is true that the commission agents (*aratdars*) also involved with other business and maintain rich livelihood. Some workers like Afsaruddin (1964), Westerguard (1975-76), Karim (1978) discussed on fishermen and fish trader's occupation in the description of socio economic and socio culture aspects. Flowra *et al.* (2012) investigated fish marketing channel of Natore and Rajshahi and found most of the fish Arotdars had large family size, secondary levels of education and took health service from upazilla hospital. Present study is compatible with previous findings. On contrary, Flowra *et al.* (2012) found most of the Arotdars had fish farmer as other profession but present study found most of the Arotdars have business as other profession in Moulvibazar but few Arotdars of Shreemongal and Kulaura Arotdars have alterenative professions. Most of the Arotdar earned 100-500 TK per day and were middle class (Flowra *et al.* 2012), however present study found that most of the Arotdar earn more than 900 TK per day.

CONCLUSION AND RECOMMENDATION:

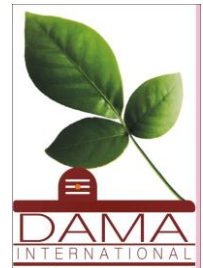
The total fish production in Bangladesh is increasing sharply year after year and status of commission agents (Arotdars) also gradually changed from middle to rich classes. Fish farmer/producer hardly gets a chance to direct communicate with the consumers. The major drawbacks of fish marketing system in Moulvibazar district resemble the existing problems of overall fish marketing systems in Bangladesh which could be summarized as- presence of long fish marketing channels, less price at farmers level. Inadequate and unplanned infrastructural development of the fish markets, Lengthy marketing channel, higher transport cost, unstable production and price, political disturbance etc. hampered the real marketing system. Special care should be taken by intermediaries during handling, packaging and transportation before placing fresh fish for sale to consumers. Government (GO) and Non-Governmental Organizations (NGOs) should therefore take efficient steps and programmes to develop fish marketing system.

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