Inland Wholesale Market for Cultured Fishes in Bangladesh

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Abstract: The fish marketing system in Bangladesh is traditional, complex and less competitive but plays a vital role to reach the product fish farmer to consumer. The present study was carried out to describe the history and function of Sattrasia fish wholesale market, to compare the role and the efficiency of landing market with that of terminal market, to observe the impact of Sattrasia fish wholesale market and to identify the problems of marketing system in the study areas. The study was based on a sample survey of 60 randomly selected fish traders from Mymensingh town and Sattasia wholesale fish market and 20 farmers from Muktagacha sub district under Mymensingh district in Bangladesh. Data were collected during March, 2006. The average per day cost and return were calculated for Beparis, wholesalers and Retailers in Mymensingh town at Tk.395.20, Tk. 268.19, Tk. 79.14 and Tk.714.70, Tk.987.84, Tk. 378.84 respectively while average per day cost and return in Sattrasia were calculated for Baperis, wholesalers and Retailers at Tk.240.00, Tk.150.20, Tk. 71.25 and Tk.420.00, Tk.643.31 and Tk. 256.96 respectively. The study also revealed that after establishing this market farmers were benefited in many ways (such as getting better price, time consume, sale the fresh fish and reduce the farmers' marketing cost etc.)
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1. Introduction

Fish and fisheries are extremely important for Bangladesh. Fisheries sector has a potential contribution in the agro-based economic development (5-6% in GDP), poverty alleviation, employment, supply of animal protein (63%) and earning the foreign currency (DoF, 2002). It is estimated that the sector fully employs approximately 1.5 million people and 12 million as per time in fisheries sector in the country for livelihood and trade. Another 3.08 million fish and shrimp farmers are cultivating fish both at subsistence and commercial level (Mazid, 2002). Bangladesh is fortunate enough having a vast inland water resources comprising ponds, lakes, canals, rivers, floodplains and estuaries covering an area of 4.34 million hectares (Mazid, 2002; Rahman and Rahman, 2003). Once various species of fish and shrimp were available in these water bodies but has sharply declined in recent years due to natural and men-made interventions in the aquatic ecosystems (IUCN, 1998; Hussain and Hussain, 1999, Hussain and Mazid, 2001).The above water bodies were very rich in the past, but the production of fish failed to keep pace with the population size, which is increasing in geometric rate. As a result, fish has become rare in the market in recent years. For this reason, people cannot consume the fish easily, which causes about 70% of people to suffer from malnutrition (DoF, 1999). Therefore, there is a chronic deficiency of essential nutrients in the diets of the people of Bangladesh (Ahmed et al., 1977).The topography is also suitable for fish farming. There were about 1.3 million ponds in the country covering 3.5% of the total area of inland, contributing 26% of total inland fish production. To overcome this severe problem, it is urgently need to supply protein-rich diet to the people. This can only be achieved through culture of fishes in our unutilized and derelict inland water bodies scattered throughout the country. There is no alternative way to overcome this problem without developing culture-based fisheries. The minimum requirement of 35 grams of fish per capita per day, actual availability is 28 grams (Bangladesh Eco. Review,2005). Hence, there is still need to improve fish consumption in the country. Therefore, to increase the productivity of inland water bodies, Bangladesh government and many development agencies have been implemented several programs to promote aquaculture as a key component. So the inland fish production is increasing and specially shrimp/prawn culture is going to be the most popular and commercially profitable business in many areas of Bangladesh, specially at the southern and north–west regions.

Figure 1 shows the inland fish production from 1999-97 to 2004-05. This figure indicates that inland fish production is increasing gradually.

Rice field also was being converted to pond for fish culture. But in Bangladesh fish market system is not well organized. Fish suppliers in the domestic market have no competitiveness in view of the huge gap in demand and supply. In Bangladesh most of the

farmers used to sell their fish in rural market which was held usually twice a week or at the doorsteps. So they did not get better price because of lacking the bargaining power. To resolve the situation establishment of fish landing market were expected in rural areas. Sattrasia fish wholesale market we will introduce in this paper is one kind of fish landing market. So the objectives of the study are as follows:

Firstly, to describe the history and the functions of Sattrasia fish wholesale market.

Secondly, to compare the role and the efficiency of landing market with that of terminal market.

Thirdly to observe the impact of Sattrasia fish wholesale market for farmers, and fourthly to identify the problems of marketing system in the study areas.

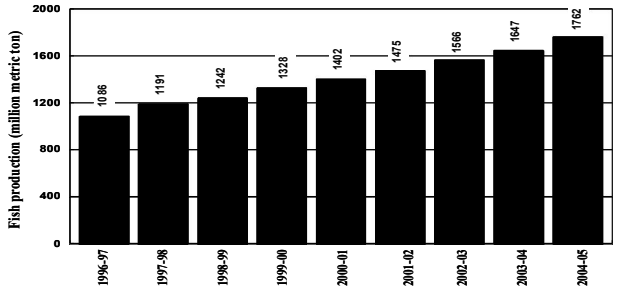

Fig. 1. Inland fish production in Bangladesh from 1996-2005

2. Material and Methods

For this study, data and information were collected from both primary and secondary sources. The study was conducted on the interview methods during march 2006. Sattrasia fish wholesale market which was newly established fish landing market in Mucktagacha and Mymensingh town terminal fish market were selected purposively for this study. 15 and 44 data were collected from Sattrasia fish wholesale market and Mymensingh town terminal fish market respectively.20 data were collected from farmers Sattrasia region for information on changes on establishing the Sattrasia fish wholesale market. This market is located in the middle of Mucktagacha sub district. Semi-structured interviews were also conducted with personal of other stakeholder organization. Besides, secondary data and information were collected from various organizations as well as from published and unpublished sources of government agencies and trade organizations in Bangladesh in the type of documents, reports, handouts, notifications, etc. having relevance with this study. The data and information from all these field surveys, were summarized by Microsoft excel which were used to write this paper. Tabular techniques were used according to the objectives. History and role of Sattrasia fish landing market is very important. Therefore it had included in result part.

3. Results

History of Sattrasia fish landing market:

After 1990s aquaculture has become popular in Bangladesh. Mucktagacha sub district is one of the well known place in Mymensingh district for cultured fishes. The oversupply for rural demand caused the low price problem soon after the introduction of aquaculture. For getting proper price farmers would have to take their easily perishable fish to districtt wholesale market or large assembly centers or sell to rural intermediary at farm gate in lower price. So they always wished to have a near and local fish wholesale market. Therefore owing to the local fish farmer's motivation and cordial willingness in Mucktagacha sub district Sattrasia fish landing market was established in 1999. Sattrasia is located in the middle of Mucktagacha sub district. This market is located on nice place beside roadside. Hence this market is good for fish farmers and intermediaries from other places for quick transportation.

Terms and condition of land acquisition:

According to the opinion and discussion among local fish farmers, fisher folk and local government personnel in this region, seven wholesalers were committed to handle this market. Those seven wholesalers were not wholesalers before. Their occupations were fisheries related. Then they made an agreement with local government personnel and rented his personal property for using as a fish landing market. For using this land they paid Tk.70,000 at a time before opening this market and per month rental fee were Tk. 3,500. They took the initiative to establish this market. Sattrasia fish wholesale is a daily noon time landing market.

Role of local landing market:

After lots of discussion and concern of local fish farmers, government personnel and personal interest of seven wholesaler made the fish farmers dream come true and established this landing market. Before opening the market, market authority made a commitment of rule on the buying and selling of fishes which says that wholesaler will act as a commission agent. Local fish farmers agree that they will sell their fishes through seven wholesalers and they will pay three percent commission of total amount to wholesalers. Transportation cost will be borne by farmers. That means wholesalers act as an auctioneer.

In Bangladesh, fish marketing is almost exclusively maintained by the private sector (Alam et al., 2010). This market played a role as a landing wholesale market. It had an auction system to make a relatively fair price. Around 100 farmers and 200 intermediaries gathered at a time from different places. Most of the local retailers and distant places retailer and *baperis* (local trader) purchased fishes

through the wholesalers. Fish prices were determined by the position of supply and demand. Most of the fishes were sold on the basis of eye-estimation. The weighing was usually estimated with eye. Wholesale transaction was done by either eye-estimation or weighing. There was no countable and statistical information on attending intermediaries (including retailers and wholesalers) in this market for buying fishes. From the interviews, three wholesalers mentioned that about 150-200 intermediaries came to this market. These intermediaries took those fishes to nearer local fish retail markets and far place wholesale markets and terminal wholesale markets in the cities.

Benefit from the establishment of this market for the fish farmers in this region:

Six farmers interviewed at market places mentioned that landing fish market were necessary in this region. After the rapid extension of fish culture converted from rice culture in this region, fish price was very low when they sold to baperi at a farm gate place due to direct negotiation. If they want to get higher price they have to take their fishes to secondary wholesale market despite high transportation cost and take time. There was no ice industry near there. For preservation of fish ice or refrigerator is necessary to control the quality of fishes. After establishing this market they do not have that sort of problems at all. Now their transportation cost is lower and they do not have any ice cost because they can sell directly to this market. They are getting fair price because of auction pricing and involvement of different place intermediaries. Local people are getting interest in fish farming.

Comparison of landing market and terminal market:

Marketing channels:

The chain of intermediaries through which the transaction of goods takes place between producer and consumer constitutes a marketing channel. In other words, marketing channel refers to a path/way composed of middlemen who perform such functions as needed to ensure smooth and sequential flow of good and services from the producers to consumers in order to achieve marketing objective of producing firms (Tasnoova and Iwamoto, 2006).

Marketing channels in the study area is shown in figure 2

Before establishment of Sattrasia fish landing market marketing channels for farmers are as follows

- Farmer→Baperi→ Wholesaler→ Retailer →Consumer
- Farmer → Wholesaler → Retailer → Consumer

After establishment of this market.

- Farmer → Wholesaler → Retailer → Consumer
- Farmer→holesaler→ Baperi→ Wholesale →- Retailer→Consumer

Marketing channel in terminal fish wholesale marker in Mymensingh is as followed

- Farmer → Baperi → Wholesaler → Retailer→ Consumer
- Farmer → Wholesaler → Retailer → Consumer

Description of market intermediaries:

Marketing channel for cultured fish starts from farmer who passes through a numbers of intermediaries and ends at the ultimate consumer. Market intermediaries undertake the vigorous tasks of assembling, sorting, handling, transporting, pricing, risk taking, distributing and etc. Baperi, wholesaler and retailer are the main intermediaries who perform these functions.

Baperi is a form of intermediary trader who has several functions. On one hand he plays the role of assembler at the landing market. In general Baperi is tied to a limited number of wholesalers who provide him with loans for their working capital. According to the report of Baperi, the total amount of working capital per Baperi was in the range of Tk.10,000 – Tk.100,000 (\20,000-200,000) depending on the business acumen of the individual. If he has loan from wholesaler then he has to sell/buy his fish through/from the same wholesaler. In the study area he also paid 3-6 percent commission to the wholesaler. The Baperi reported that his main function was buying fish from different farm gate place, village market or assembling market and selling fishes to another market through wholesalers. Baperi's main transportation method was bus, tempo, van, truck etc. He bought fishes from farmers by price negotiation at farm gate place and village market but at an assembling market he bought fishes by auctioning or bidding.

Wholesaler plays a leading role in the fish marketing system of Bangladesh. They can play several brokerage functions at the same time. This includes commission whereby they obtain a percentage fee of the auctioning price (i.e. normally 3 - 6 %, in the case of fresh fish marketing). In some cases, part of the commission fee is also seen as an interest for loan which they advanced to intermediaries. One lakh Taka (i.e. \200,000) is the very minimum amount of working capital required to become a small wholesaler. In the study areas, all of the wholesalers said that they did not have any transportation cost. They had enough physical facilities in their business premises to keep the goods for sorting and sometimes

weighing of fishes before auction takes place for which they received a commission.

Retailer: The numbers of Retailer were huge in the study area and they acted as purchasers and seller in the same market or in the other market. Retailer had no permanent establishment but they had a fixed placed to sit on the market center. Most of the retailers were purchased fish from wholesaler and about 60% retailers were purchased fish on cash. In Sattrasia all retailers sold their fishes to different retail markets and they used van, rickshaws, tempo, bus, truck and etc.

Analysis of cost and return for different intermediaries and fish farmers:

Table 1 and 2 show the cost and return for different intermediaries at Sattrasia and Mymensingh. Both tables indicate that marketing cost was highest for baperi. Regarding marketing cost, the position of wholesaler was better than that of baperi because some cost items like large amount of commission and transportation cost were absent in the case of wholesaler.

Table 1. Cost and return per day for different intermediaries at Sattrasia

Intermediaries	Purchase price	Purchase quantity	Total value	Selling price	Selling quantity	Total value	Margin	cost	return
	Tk./kg	Kg	Tk.	Tk./kg	Tg	Tk.	Tk.	Tk./day	Tk./day
Baperi	68.00	60.00	4080.00	79.00	60.00	4740.00	660.00	240.00	420.00
Wholesaler				85.01	312.86	26450.29	793.51	150.20	643.31
Retailer	76.73	33.86	2587.17	86.91	33.86	2915.39	328.21	71.25	256.96
Retailer	76.73	33.86	2587.17	86.91	33.86	2915.39	328.21	71.25	256.96

Source: Survey Data in 2006

Table 2. Cost and return per day for different intermediaries at Mymensingh

Intermediaries	Purchase price	Purchase quantity	Total value	Selling price	Selling quantity	Total value	Margin	cost	return
	Tk./kg	Kg	Tk.	Tk./kg	Tg	Tk.	Tk.	Tk./day	Tk./day
Baperi	80.00	82.44	6571.94	96.88	82.44	7681.84	1109.90	395.20	714.70
Wholesaler				90.09	482.50	41867.63	1256.03	268.19	987.84
Retailer	92.09	38.34	3542.19	104.06	38.34	4000.18	457.99	79.14	378.84

Source: Survey Data in 2006

In both places, margin, cost and return per day were lowest for retailers because of lowest selling quantity and in both places wholesalers per day return was highest for selling the large quantity per day. On the other hand intermediaries' profit was lower in Sattrasia than in Mymensingh.

To compare the marketing efficiency we calculated the ratio of return to margin by kg basis on table 3 and 4.

It indicates that there is no difference between Sattrasia and Mymensingh for Bepari but we can observe some difference for wholesaler and retailer. In the case of wholesaler the ratio is higher in Sattrasia than in Mymensingh but the ratio is lower in Sattrasia than in Mymensingh for retailer. It means the market in Sattrasia is efficient for wholesaler.

Table 3. Marketing Efficiency for different intermediaries at Sattrasia

	Margin	Cost	Return	Margin Return Ratio
Intermediaries	(A)		(B)	(A)/(B)
Bepari	11.00	4.00	7.00	63.6
Wholesaler	2.54	0.48	2.06	81.1
Retailer	9.69	2.10	7.59	78.3

Source: Survey Data in 2006

Table 4. Marketing Efficiency for different intermediaries at Mymensingh

	Margin	Cost	Return	Margin Return Ratio
Intermediaries	(A)		(B)	(A)/(B)
Bepari	13.46	4.79	8.67	64.4
Wholesaler	2.60	0.56	2.05	78.9
Retailer	11.95	2.06	9.88	82.7

Source: Survey Data in 2006

Marketing problems of intermediaries:

Wholesale fish markets are mostly run by a few wholesalers who greatly restrict the newcomers (See Table 5).

Table 5. Problems reported by different intermediaries at Sattrasia and Mymensingh

Problems	Type of intermediaries					Total respondents	Percentage
	Sattrasia fish market		Mymensingh fish market				
	Wholesaler	Retailer	Bepari	Wholesaler	Retailer		
Number of sample	7	7	9	16	19	58	
Inadequate physical facilities	71.4	85.7	77.8	93.8	89.5	50	86.2
Lack of hygienic knowledge	85.7	100.0	88.9	100.0	94.7	54	93.1
Lack of ice supply	57.1	100.0	88.9	93.8	63.2	46	79.3
Lack of perishable product transport	57.1	42.9	66.7	50.0	52.6	31	53.5
Inadequate knowledge of storage and quality control	71.4	57.1	55.6	62.5	47.4	54	93.1
Entry of new wholesaler (difficult)	100.0	85.7	88.9	100.0	94.7	54	93.1
Political unrest	42.9	57.1	66.7	75.0	73.7	39	67.2
Total response	35	35	48	92	98		
Frequency response	5.0	5.0	5.3	5.8	5.2		

Source: Survey Data in 2006

Sattrasia fish landing market was run by a total of seven wholesalers and in Mymensingh town three wholesale markets were run by 39 wholesalers. So actually competition was not so keen at the wholesale market. Landing facilities and wholesale fish markets are not well developed throughout the country. Inland fish wholesale markets are entirely run by the private sector.

Fish landing markets run by the fish traders are of very poor standard and need improvement in terms of facilities. In most cases there are no auction sheds, no packing sheds, no landing terminals, no gangways, no pontoons and no proper drainage or hygienic facilities. Adding to this there is no proper handling, washing, cleaning, icing or re-icing of the fish functions. They care very little for post-harvest management of the resource, being more interested in earning more revenue at the cost of the fishermen and the consumers.

Impact of Sattrasia fish wholesale market

To observe the impact of Sattrasia fish wholesale market 20 farmers' were interviewed. Information were collected from farmers who cultured fish since 1995, information were collected from them. Table 6 shows fish farmers' average land distribution (before establishing Sattrasia fish wholesale market). The table indicates that before establishing the market fish farmers' average pond holding area was 0.69 acre and other crops cultivated land area was 5.21 acre.

Table 6. Average land distribution (before establishing the Sattrasia fish market

Utilization of land	Average area (acre)	Percentage
Homestead area	0.59	8.82
Pond	0.69	10.31
Own cultivated land	5.21	77.88
Mortgaged in (Borrow)	1.00	14.95
Mortgaged out (Lend)	0.80	11.96
Total	6.69	100.00

Source: Survey Data in 2006

Table 7 shows fish farmers' average land distribution (after establishing Sattrasia fish wholesale market). The table indicates that after establishing the market fish farmers' average pond holding area was 3.90 acre and other crops cultivated land holding area was 2.00 acre. So, after establishing the market fish culture was expanded rapidly and other crops cultivated area was declined.

Table 7. Average land distribution (after establishing the Sattrasia fish market)

Utilization of land	Average area (acre)	Percentage
Homestead area	0.59	8.32
Pond	3.90	55.00
Own cultivated land	2.00	28.21
Mortgaged in (Borrow)	1.30	18.34
Mortgaged out (Lend)	0.70	9.87
Total	7.09	100.00

Source: Survey Data in 2006

Table 8 shows fish farmers' per acre cost structure (before establishing the market). The table indicates that before establishing the market fish farmers' per acre average marketing cost was Tk.1000.00 (\2000.00) and total cost was Tk.16,994.00 (\33,988.00).

Table 8. Per acre cost structure (before establishing the Sattrasia fish market)

Cost items	Value (Tk.)	Percentage
Hired labor cost (Tk.)	500	2.94
Fingerlings (Tk.)	5,120	30.13
Rice bran 'Tk.)	2,500	14.71
Wheat bran (Tk.)	700	4.12
Oil cake (Tk.)	204	1.20
Material cost:		
Cow dung (Tk.)	720	4.24
Urea (Tk.)	520	3.06
TSP (Tk.)	310	1.82
Lime (Tk.)	630	3.71
Fuel (Tk.)	310	1.82
Marketing cost (Tk.)	1,000	5.88
Other Cost (Tk.)	250	1.47
A. Total Variable cost (Tk.)	12,744	74.99
Permanent labor cost (Tk.)	2,500	14.71
Land Used Cost (Tk.)	1,000	5.88
Interest in Operating Capital (Tk.)	750	4.41
B. Total Fixed Cost (tk.)	4,250	25.01
Total cost (Tk.) A+B	16,994	100.00

Source: Survey Data in 2006

Table 9 shows fish farmers' per acre cost structure (after establishing the market). The table indicates that before establishing this market fish farmers' per acre average marketing cost was Tk. 400.00 (\800.00) and total cost was Tk. 30,330.00 (\60,660.00). After establishing this market, total cost for fish production per acre was around double of before establishing the market. But marketing cost was reduced and it was less than half of before establishing the market.

Table 9. Per acre cost structure (after establishing the Sattrasia fish market)

Cost items	Value (Tk.)	Percentage
Hired labor cost (Tk.)	850	2.80
Fingerlings (Tk.)	10,500	33.95
Balanced Food (Tk.)	3,000	9.70
Rice bran 'Tk.)	3,500	11.32
Wheat bran (Tk.)	800	2.59
Oil cake (Tk.)	300	0.97
Material cost:		
Cow dung (Tk.)	900	2.91
Urea (Tk.)	810	2.62
TSP (Tk.)	520	1.68
Lime (Tk.)	950	3.07
Fuel (Tk.)	400	1.29
Electricity	500	1.62
Marketing cost (Tk.)	400	3.23
Other Cost (Tk.)	350	2.26
A. Total Variable cost (Tk.)	23,230	77.04
Permanent labor cost (Tk.)	4,100	13.26
Land Used Cost (Tk.)	2,000	6.47
Interest in Operating Capital (Tk.)	1,000	3.23
B. Total Fixed Cost (tk.)	7,100	22.96
Total cost (Tk.) A+B	30,330	100.00

Source: Survey Data in 2006

Table 10 shows fish farmers' income-cost-profitability for per acre fish farming (before establishing the market). The table indicates that before establishing the market fish farmers' per acre total cost was Tk.16,994.00 (\ 33,988.00) and before establishing the market fish farmers' per acre gross return and gross profit were Tk.93,000 (\186,000) and Tk.56,006 (\112,012) respectively.

Table 10. Income-cost –profitability for per acre fish farming (before establishing the Sattrasia fish market)

Gross Return (Tk.)	A	93,000
Variable Cost (Tk.)	B	12,744
Fixed Cost (Tk.)	C	4,250
Total Cost (Tk.)	D= B+C	16,994
Gross Profit (Tk.)	E = A-D	56,006

Source: Survey Data in 2006

Table 11 shows fish farmers' income-cost-profitability for per acre fish farming (after establishing the market). The table indicates that after establishing the market fish farmers' per acre total cost was Tk.16,994.00 (\33,988.00) and after establishing the market fish farmers' per acre gross return and gross profit were Tk.175,000 (\350,000) and Tk.144,270 (\288,540) respectively.

To compare table10 and 11, the tables indicate that after establishing the Sattrasia fish wholesale market, fish farmers gained double gross return and average gross profit was three times higher than before establishing the market. It became clear that gross profit of fish farmers after establishing the market is quite high compared to before establishing the market. The high profitability of fish farming shown here was a result from establishment of Sattrasia fish wholesale market.

Table 11. Income-cost –profitability for per acre fish farming (after establishing the Sattrasia fish market)

Gross Return (Tk.)	A	175,000
Variable Cost (Tk.)	B	23,230
Fixed Cost (Tk.)	C	7,100
Total Cost (Tk.)	D= B+C	30,330
Gross Profit (Tk.)	E = A-D	144,270

Source: Survey Data in 2006

Table 12 shows changes reported by farmers. All fish farmers agreed that after establishing this market fish farming expanded rapidly as well as marketing cost also declined. Before establishing Sattrasia fish wholesale market farmers profit was low because of pricing system. Before it was negotiations system and farmers used to sell their fishes at farm gate, weekly village market and terminal market. Now they can sell their fish at Sattrasia fish daily wholesale market and pricing system is auctions.100 percent farmers reported that now they are highly satisfied for culturing fish. wholesale market.

Table 12. Changes reported by farmers (establishing the Sattrasia fish market)

Items	Before	After
Fish farming area	Increasing slowly	Increasing rapidly
Marketing cost	High	Decline
Ice cost	High	No ice cost
Fish condition	Not so fresh	Fresh
Selling price	Low	High
Pricing system	Negotiations	Auction
Profit	Low	High
Time consume	Took time	Saving the time
Harvest time	Mid night	Early in the morning
Selling price	Farmgate, weekly village market, terminal market	Landing market
Farmer's satisfaction	Not satisfied	Highly satisfied

Source: Survey Data in 2006

Conclusion:

Sattrasia market which is a newly established landing market played an outstanding role for not only fish farmers but also the different kinds of intermediaries. Comparing Sattrasia fish landing market and Mymensingh terminal market from the view point of costs and returns for intermediary there are not large difference between two markets. But to analyze more carefully we can find that the efficiency of landing market wholesalers is better than that of terminal market wholesalers mainly by saving cost. And the complaints' on the situation of market is relatively high in terminal market wholesalers. Many of the wholesalers reported that the lack of hygienic, storage and quality control knowledge are main problems. Though market intermediaries had a lot of problem in fish trading but this business was profitable for all intermediaries. This market offered direct selling opportunity for farmers and fair price fixing and helped saving marketing cost especially and this market also saved farmers time. After establishing this market, fish culture is expanding day by day. Now farmers can sell the fresh fish. They need not to harvest the fish in the midnight; they can harvest fish early in the morning. According to farmers' report, all farmers had mantel satisfaction which is important for continuing the fish farming. So fish landing market will make people interested in rural areas in Bangladesh.

For improving marketing systems specific suggestions are given:

I) To improve fish transport, handling and shipment facilities all over the country.

II) To establish ice factories for sufficient supply.

III) To introduce modern wholesaling and retailing facilities and quality control measures.

IV) Fish farmers and fish market operators should be trained on fish preservation, handling, icing and curing.

V) To improve the hygienic conditions of fish landing centers, wholesale and retail market.

VI) To improve the physical facilities at sale points.

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References

1. Ahmed K., Hussain MA., Huda N. and. Abdullah M.1977. Nutritional survey of rural Bangladesh. Inst. Nutr. Food. Sci., Dhaka Univ., pp:6.
2. Alam MJ., Yasmin R., Nahar N., Pinky NI. And Hasan M.A Study on Fish Marketing System in Swarighat, Dhaka, Bangladesh. Nature and Science, 2010 8 (12) pp 96-103 www.sciencepub.net/nature.
3. Bangladesh Economic Review, 2005. Economic adviser's Wing, Finance Division, Ministry of Finance, Government of the People's Republic of Bangladesh. June 2005, pp:8.
4. DoF., 2002. Brief on Department of Fisheries Bangladesh. Department of Fisheries (DoF), Ministry of Fisheries and Livestock, Dhaka, Bangladesh.
5. DoF., 1999. Brief on Department of Fisheries Bangladesh. Department of Fisheries (DoF), Ministry of Fisheries and Livestock, Dhaka, Bangladesh.
6. Hussain, MG, and Hussain MA. Controlled breeding technology and step for conservation of gene pool of certain endengered fish species of Bangladesh. Fish. Newslet. 1999.7:2-3.
7. Hussain MG. and Mazid MA. Genetic improvement and conservation of carp species in Bangladesh. Bangladesh Fisheries Research Institute and international Center for Living Aquatic Resources Management, 2001.pp: 74.
8. IUCN, Bangladesh, 1998. List of threatened animals of bangladesh. Paper presented in the special workshop on Bangladesh. Red book of threatened Animals, 22 February 1998, Dhaka, pp: 13.
9. Mazid, MA. Development of Fisheries in Bangladesh: Plans and Strategies for Income Generation and Poverty Alleviation. Nasima Mazid, 2002 pp: 176.
10. Rahman, M.A. and. Rahman MR.. Studies on the growth and survival of Sharpunti (Puntius sarana) spawn at different stocking densities in single stage nursing. Progress. Agric., 2003 14: 109-116.
11. Tasnoova, S andIwamoto I Kataribhog Rice Marketing System in Dinajpur District, Bangladesh. The Memoirs of the faculty of Agriculture, Kagoshima University.. Vol.XXXXI (Consecutive Number 50) 2006.pp: 19-50.

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