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## Availability of Fishes and Their Marketing in the Pultakanda Fish Landing Center, Bhairab, Bangladesh

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### Abstract

An investigation was carried out in Pultakanda fish landing center at Bhairab, Kishoreganj, Bangladesh, to know the availability of fishes and the existing marketing channels and fish trading. The investigation was conducted from March 2013 to May 2014. During the study period, a total of 67 species of finfish and 6 species of crustacean shellfish were identified from the studied market. Three types of fish marketing chain were identified from fishermen to consumers in Pultakanda fish landing center. Most of the fishes came from Jagannathpur, Kalikaprosad, Narayanpur, Bajitpur, Kuliarchar, haor of the Kishoreganj (Itna and Mithamoin), Ashuganj, Nabinagar, Lalpur, Chamragaci, Ajmiriganj, Paharpur, Aganagar, Samaschar, Netrokona, Mitabon, Sunamganj etc. Most of the fishes were supplied to Dhaka city from this landing center. Considerable amount of fish were exported to the India, Singapur, Malaysia, and Mymanmer. Marketing facilities were found to be manifested with a large number of problems. These were higher transportation cost, poor communication, absence of icing facilities, inadequate water supply, poor hygienic and sanitation condition etc. Basic infrastructure such as, clean water supply, sanitary facilities, adequate drainage system, icing, flooring etc. should be ensured for promotion of fish marketing system.

**Keywords:** Fish market; Fish availability; Marketing channels and Constrains.

### 1. Introduction

Fish market is a place where people gather for selling and buying of fishes. Fish marketing system is the system through which fishes reach to consumers from producers [1]. Fish consumers are ultimately depend on an effective fish marketing system, through which fishes will be available to them within a short period before decomposition of fishes. Fish marketing in Bangladesh, is almost exclusively a preserve of the private sector where the livelihoods of a large number of people are associated with fish production and marketing systems [2]. However, the most serious marketing difficulties seem to occur in remote communities with lack of transportation, ice and poor road facilities and where the farmers are in particularly weak position in relation to intermediaries [3, 4]. The middlemen in the fisheries sector, have established a new marketing chain, based on the extreme exploitation of the fish farming communities, by setting up an artificial pricing chain through intermediaries at different levels [5-7]. As a result farmers have poor knowledge on pricing policy. Without developing fish marketing system, fisheries sector will not be developed up to a satisfactory level. Fish production can be increased through scientific method but without good marketing system it will ultimately be fruitless. So, proper emphasis should be given to improve the existing fish marketing system as both are interrelated and closely associated with each other. Therefore, it is important to know the existing fish marketing system. Pultakanda fish landing center of Bhairab upazila is very important because huge amount of fish are landed in this landing site. The objectives of this study are to know the availability of different fish species in Pultakanda fish landing center, to understand existing fish marketing systems, to identify marketing inefficiencies and finally to develop some recommendations for the improvement of existing marketing system.

### 2. Materials and Methods

The study is based on market survey obtaining information through a sample survey among fish farmers, operators (middlemen) fish traders and consumers. Bhairab fish landing center

were selected as the study area (Fig. 1). It is situated in the Bhairab upazila under the district of Kishoreganj. Bhairab is located at 24.05°N and 90.99°E. The landing center is situated beside the rivers of Meghna and Brahmaputra. These two rivers and several haors in the Kishoreganj are the major source fish for this landing center. To fulfill research

objectives, an interview schedule was prepared to collect data from target groups. The criteria that were used to measuring the efficiency of fish marketing system were:

- ❖ Availability of fish
- ❖ Marketing system
- ❖ Current worries

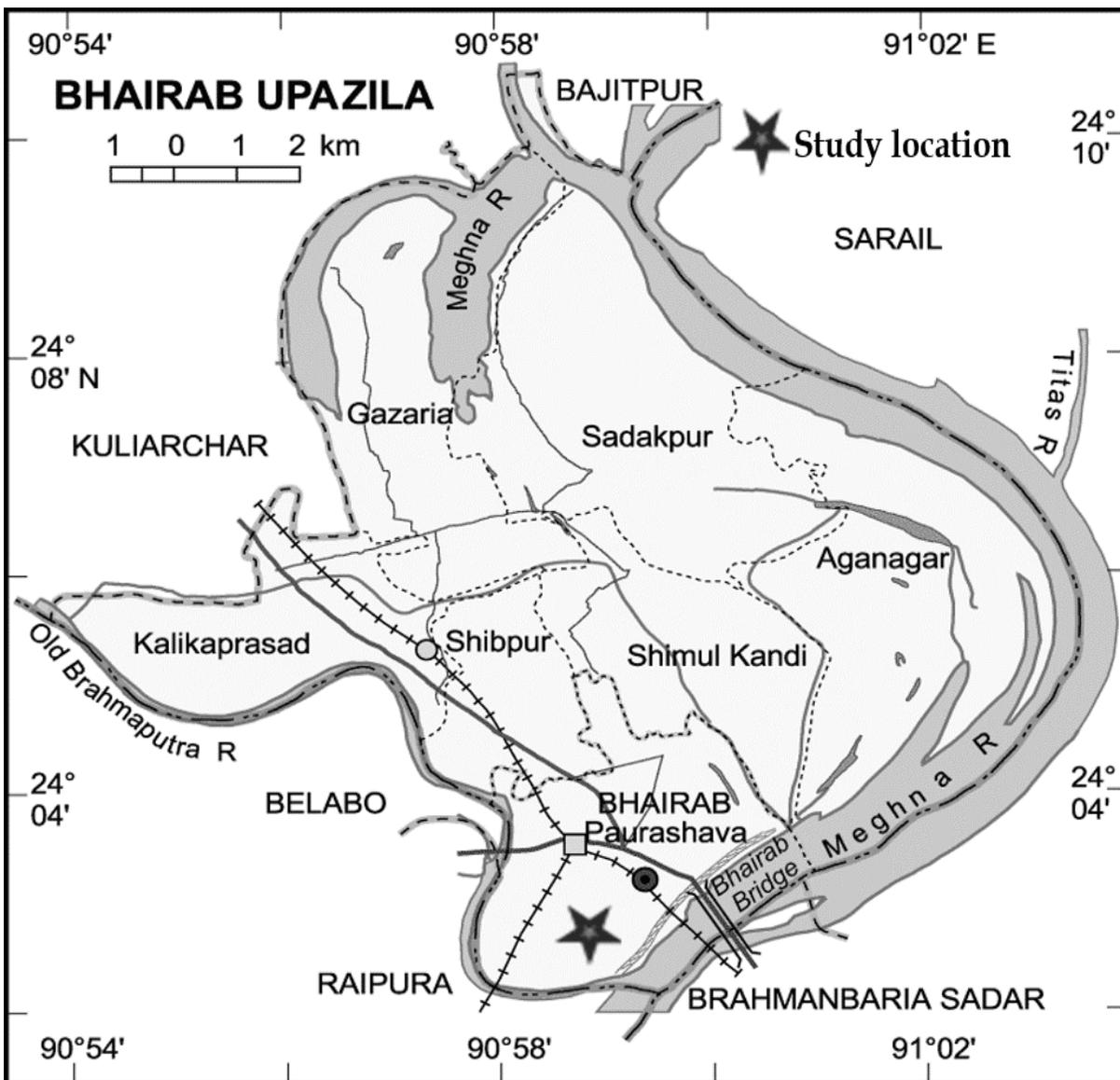


Fig 1: Study area

To examine the objectives of the study, the following groups of the people were selected:

- ✓ Fisherman and Fish farmer
- ✓ Commission agents (middlemen)
- ✓ Fish traders (retailers)
- ✓ Consumers

The data collection as well as field survey was undertaken for twelve months from May 2013 to April 2014. Data collection methods were divided into 3 steps. These were questionnaire interview with fish retailers, focus group discussion with intermediaries and cross-check interview with key informants. Cross-check interviews were conducted with local leaders and Upazila Fisheries Officer where information was contradictory for further assessment. They were especially knowledgeable on marketing system of the study area and were expected to be

able to answer questions in relatively important way about the knowledge and behavior of others. After collection of data from the field, these were verified to eliminate errors and inconsistencies. Finally, data were converted into international units, before transferring to the computer. Preliminary data sheets (in computer) were compared with the original questionnaire and result sheets to ensure the accuracy of the data entry. The data were processed and finally analyzed using Microsoft Excel software.

### 3. Result and Discussion

During the study period a good number of freshwater finfish (67) species and crustacean (6) species were available in the Pultakanda fish landing center (Table 1 and 2).

**Table 1:** List of fresh water fish species observed in the Pultakanda fish landing center

Sl.	Local name	Common name	Scientific name
<b>Cyprinidae</b>			
1	Rui	Indian major carp	<i>Labeo rohita</i>
2	Catla	Indian major carp	<i>Catla catla</i>
3	Mrigal	Indian major carp	<i>Cirrhinus cirrhosus</i>
4	Kalibaus	Black rohu	<i>Labeo calbasu</i>
5	Grass carp	Grass carp	<i>Ctenopharyng-odon idella</i>
6	Black carp	Black carp	<i>Mylopharyngodon piceus</i>
7	Bighead carp	Bighead carp	<i>Aristichthys nobilis</i>
8	Silvar carp	Silver carp	<i>Hypophthalmi-chthys molitrix</i>
9	Carpio	Common carp	<i>Cyprinus carpio</i>
10	Mirror carp	Mirror carp	<i>Cyprinus carpio var specularis</i>
11	Scale carp	Scale carp	<i>Cyprinus carpio var nudus</i>
12	Bata	Minor carp	<i>Labeo bata</i>
13	Mola	Mola carplet	<i>Amblypharyngodon mola</i>
14	Dhela	Cotio	<i>Osteobrama cotio</i>
15	Darkina	Gangetic scissortail rasbora	<i>Rasbora rasbora</i>
16	Gonia	Boggut labeo	<i>Labeo boggut</i>
17	Nandina	Kultalabeo	<i>Labeo nandina</i>
18	Mohashol	Putitor Mahashol	<i>Tor putitora</i>
19	Dhela	Cotio	<i>Osteobrama cotio</i>
20	Sarpunti	Olive barb	<i>Puntius sarana</i>
21	Jatpunti	Pool barb	<i>Puntius sophore</i>
22	Tit punti	Ticto barb	<i>Puntius ticto</i>
23	Chela	Large razorbelly minnow	<i>Salmostoma baccaila</i>
<b>Bagaridae</b>			
24	Golsha tengra	Day's mystus	<i>Mystus bleekeri</i>
25	Tengra	Striped dwarf catfish	<i>Mystus vittatus</i>
26	Bujori tengra	Pyjama catfish	<i>Mystus tengara</i>
27	Gura tengra	Hummingbird catfish	<i>Rama chandramara</i>
28	Rita	Whale catfish	<i>Rita rita</i>
29	Air	Long whiskered catfish	<i>Sperata aor</i>
<b>Sisoridae</b>			
30	Baghair	Dwarf goonch	<i>Bagarius bagarius</i>
<b>Clariidae</b>			
31	Magur	Walking catfish	<i>Clarius batrachus</i>
<b>Heteropneustidae</b>			
32	Shing	Stinging catfish	<i>Heteropneustes fossilis</i>
<b>Pangasidae</b>			
33	Pungus	Yellowtail catfish	<i>Pangasius pangasius</i>
<b>Schilbeidae</b>			
34	Kajoli	Jamuna ailia	<i>Ailia punctata</i>
35	Bacha	Batchwa vacha	<i>Eutropiichthys vacha</i>
36	Batasi	Indian potasi	<i>Pseudeutropius atherinoides</i>
37	Garua	Muribacha	<i>Clupisoma garua</i>
38	Silong	Silond catfish	<i>Silonia silondia</i>
<b>Siluridae</b>			
39	Pabda	Pabdah catfish	<i>Ompok pabda</i>
40	Kani pabda	Butter catfish	<i>Ompok bimaculatus</i>
41	Madhu pabda	Pabo catfish	<i>Ompok pabo</i>

42	Boal	Freshwater shark	<i>Wallago attu</i>
<b>Clupidae</b>			
43	Kachki	Ganges river sprat	<i>Corica soborna</i>
44	Chapila	Indian River Shad	<i>Gudusia chapra</i>
45	Ilish	Hilsa shad	<i>Tenualosa ilisha</i>
46	Chandana ilish	Toli shad	<i>Tenualosa toli</i>
<b>Channidae</b>			
47	Taki	Spotted snakehead	<i>Channa punctata</i>
48	Cheng	Dwarf snakehead	<i>Channa gachua</i>
49	Shol	Snakehead murrel	<i>Channa striata</i>
50	Gozar	Great snakehead	<i>Channa marulius</i>
<b>Mastacembelidae</b>			
51	Tara baim	Lesser spiny eel	<i>Macrognathus aculeatus</i>
52	Sal baim	Zig zag eel	<i>Macrognathus armatus</i>
53	Guchi	Barred spiny eel	<i>Macrognathus pancalus</i>
<b>Ambassidae</b>			
54	Chanda	Elongate glass perchlet	<i>Chanda nama</i>
55	Ranga chanda	Indian glassy fish	<i>Parambassis ranga</i>
<b>Anabantidae</b>			
56	Koi	Climbing perch	<i>Anabas testudineus</i>
<b>Nandidae</b>			
57	Bheda	Gangetic leaffish	<i>Nandus nandus</i>
<b>Osphronemidae</b>			
58	Khalisa	Banded gourami	<i>Colisa fasciata</i>
<b>Gobiidae</b>			
59	Bele	Tank goby	<i>Glossogobius giuris</i>
<b>Notopteridae</b>			
60	Chital	Clown knife fish	<i>Chitala chitala</i>
61	Foli	Bronze featherback	<i>Notopterus notopterus</i>
<b>Engraulidae</b>			
62	Phasa	Gangetic hairfin anchovy	<i>Setipinna phasa</i>
<b>Cobitidae</b>			
63	Gutum	Guntea loach	<i>Lepidocephalichthys guntea</i>
64	Bou mach	Bengal loach	<i>Botia dario</i>
<b>Belonidae</b>			
65	Kakila	Freshwater garfish	<i>Xenentodon cancila</i>
<b>Cichlidae</b>			
66	Tilapia	Mozambique tilapia	<i>Oreochromis mossambica</i>
67	Nilotica	Nile tilapia	<i>Oreochromis niloticus</i>

**Table 2:** List of Crustacean species observed in the Pultakana fish landing center

Sl.	Local name	Common name	Scientific name
1	Golda chingri	Giant freshwater prawn	<i>Macrobrachium rosenburgii</i>
2	Kunchu chingri	Kuncho river prawn	<i>Macrobrachium lamaerrei</i>
3	Golda chingri	Goda river prawn	<i>Macrobrachium scabriculum</i>
4	Dimua chingri	Dimua river prawn	<i>Macrobrachium villosimanus</i>
5	Gura chingri	Spinder prawn	<i>Macrobrachium tenuipes</i>
6	Chatka chingri	Monsoon river prawn	<i>Macrobrachium malcolmsonii</i>

A number of middlemen were involved between fishermen and consumers in fish marketing system in Bhairab town. The market chain from fishermen to consumers passes through a number of intermediaries such as: local fish traders (paikers), wholesalers and retailers. Three market channels were found in the market are as follow:

Channel I: Fish farmer → Paikers → Wholesalers → Retailers → Consumers  
 Channel II: Fish farmer → Wholesalers → Retailers → Consumers  
 Channel III: Fish farmer → Retailers → Consumers

Pultakanda fish landing center is a popular fish landing center in Bangladesh. Everyday a lot of fish are landed in this center. A lot of fish are caught everyday by the fishermen from the nearby river, hoar, beel, low land etc. Not only the captured fish but also some cultured fish brought here to sell. Huge number of captured fish comes from the Bajitpur and

Kuliarchar area. Raipura and Belabo upazila which is situated in Narsinghdi district supply fish in this landing center. Various haor of the Kishorgonj such as Itna, Mithamoin etc. are important sources of fish for this landing center. Ilish is an important fish species that come from Chandpur. Fish also come from various areas of Bramanbaria such as Ashuganj, Nabinagor, Lalpur etc. Other areas that supply fish in this landing center are Chamragaci, Ajmirigonj, Paharpur, Aganagar, Samaschar (Netrokona), Mitabon, Sonamganj etc. The percentages of fish coming from various areas are shown in Figure 2.

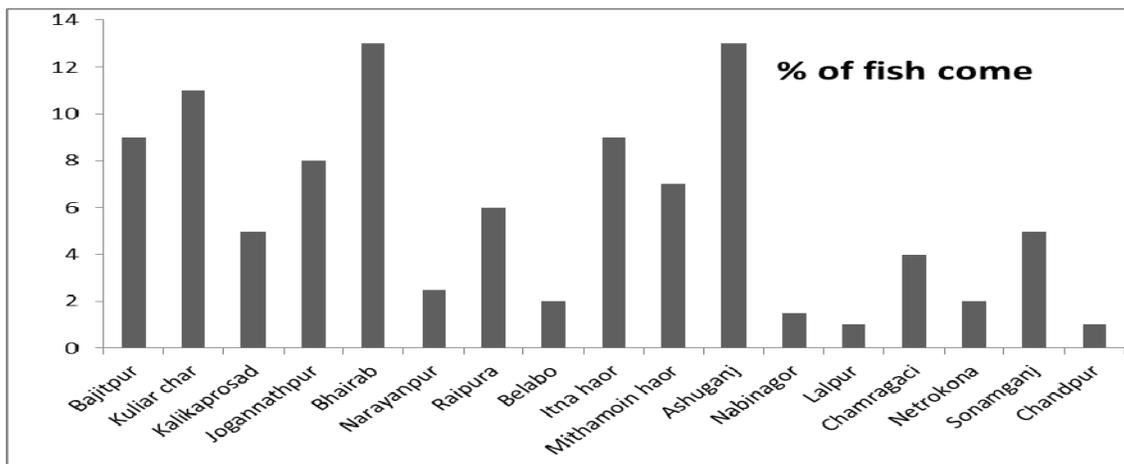


Fig 2: Percentage of fish coming from different area

Percentages of outgoing areas of fish from this landing center are shown in Figure 3. Most of the local required fish are fulfilled from this landing center. Three markets of Bhairab bazar such as Mina bazar, Choke bazar, Rani bazar etc. receive their fish from this landing center. Narsingdi sadar market also receives fish from this landing center. Most of the fish from this landing center are supplied to the Dhaka, Chittagong etc. Considerable amount of fish goes to the Mymensingh, Bramanbaria, Kishoreganj sadar. Other area that receives from this landing center is Gawchia of Narayanganj, Sylhet, Sonamganj, Gazipur, Comilla, Feni etc. In general the high income groups buy large fish and the lower and middle-class group are able to afford medium-sized and small fishes. Smaller restaurants and hotel also buy fish but most of the fish is consumed by the households. Daily supply of fish in, Mina

bazar, Choke bazar, Rani bazar, Puran bazar and municipal market had been estimated to be 1-2 tones, 4-5 tone and 5-6 tones, respectively. Virtually most of the fish (95%) are supplied to the different areas of the other districts. Some fishes are also exported in the other country especially Singapur, Malaysia, India, and Myanmar. According to the upazila Fisheries Officer, fish supply to the markets was not satisfactory during 1990s. Nevertheless, it is probably safe to say that compared to some 10 years ago, the market volume has increased and a lot of businessmen are involved with this fish landing center. It is estimated that about half of the fish regularly sold in markets are major caps. Besides the carps, another fish, e.g. hilsa, catfish, tilapia, small indigenous species (SIS) of fish and prawn are sold in the landing center.

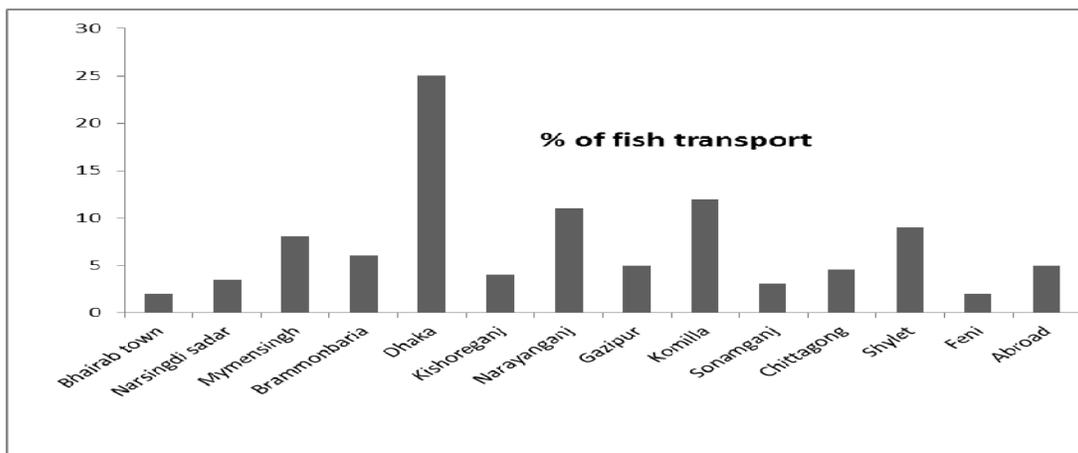
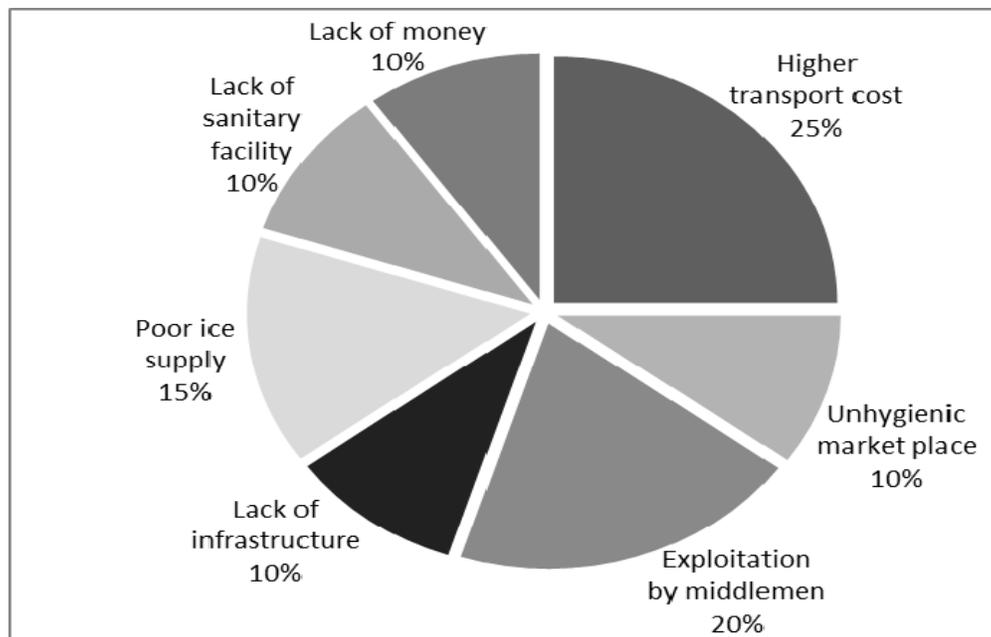


Fig 3: Percentage of outgoing areas of fish from landing center.

Some marketing constraints were reported by fishermen, paiker and retailers, including higher transportation cost, poor road and transportation facilities, poor supply of ice, exploitation by middlemen as a result of lower market prices, inadequate drainage system, poor water supply, poor sanitary facilities and unhygienic condition. As a result, the perishable product of fish get damaged and the retailers sold these in cheap price, sometimes they even failed to get any revenue due

to quality deterioration. The highest number of respondent's i.e. 25% identified higher transport cost and 20% of respondents identified exploitation by middlemen as the single most constraints of fish marketing. About 15% respondents identified poor icing facility. Unhygienic market place, lack of infrastructure, lack of money and lack of sanitary facility identified as problem by 10% (Figure 4).



**Fig 4:** Graphical representation of constraints of fish marketing in the Pultakanda fish landing center.

As a result of constraints, the perishable product of fish get damaged and the retailers sold these in cheap price, sometimes they even fail to get any revenue due to quality deterioration. Of course this is the common scenario of fish markets in rural Bangladesh [8, 9].

#### 4. Conclusion

The problems confronting by the traders and consumers in Pultakanda fish landing center can be solved to a great extent by increasing efficiency in the marketing system through research and experiments. Facilities for transportation, storage and improvement marketing information may significantly improve the marketing efficiency of fish in the study area. The following points should be considered for immediate development of fish marketing system in the study area.

Basic infrastructure such as, clean water supply, sanitary facilities, adequate drainage system, icing, flooring etc. should be ensured for promotion of fish marketing system. Fish traders have very limited knowledge of hygiene and sanitation. It is also indispensable that the fish landing center should kept clean. Proper management with regards to day-to-day maintenance of the market-premises from a sanitary and hygienic point of view has to be ensured.

The traders have little access to bank credit due to too much official formalities and related activities. The local NGO's may come forward to help the fish traders through providing credit on soft-terms basis.

Insufficient supply of ice in market is one of the most serious problems for fish preservation. Ice is fundamental for good fish storage and preservation. Having ice readily available on the premises will facilitate the enhancement of appropriate fish

handling. It is therefore important to supply sufficient amount of ice to the markets.

A positive policy at government level should be adopted and implemented properly for sustainable marketing system.

On the basis of findings of the study the following recommendations have been made for the improvement of existing marketing of fishes:

- ❖ Cold storage should be constructed so that the producers and intermediaries can save their products
- ❖ Modern communication system and availability of adequate market information should be introduced to remove unreliable price information.
- ❖ Water and electricity supply as well as drainage facilities should be improved at the market place to keep a healthy atmosphere for fish trading.
- ❖ Institutional credit should be provided on easy term for the traders at their crisis moment.
- ❖ A special Fishers' Corner should be established in each market where the fisher can sell their fish directly to the consumers.
- ❖ Government may fix the commission of Arotdars so that they cannot charge unreasonable commission for their service.

#### 5. Acknowledgements

We express our heartfelt gratitude to the all fishermen, paikers and arotdars of Pultakanda fish landing center for their cordial help during the study period and we also express thanks to the Ministry of Science and Technology, Government of the People's Republic of Bangladesh for providing fund during the research period.

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