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Fish marketing system and livelihood status of fish traders in Ishwarganj Upazila under Mymensingh district

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Abstract
An investigation was carried out from July 2016 to June, 2017 to know the fish marketing system, available fish species and livelihood status of fish traders in Iswarganj of Mymensingh. In Iswarganj upazila, almost all type fish traded internally move through the private sector where a large number of people are dealing with fish distribution and marketing system. The market chain from producers to retailers goes onward through a number of intermediaries: traders, broker, aratdar, retailer, wholesalers and mahajans. On the basis of a sample of 15 traders from each of the nine markets, the usual amount of daily turnover of fish in this upazila is about Tk15 lac and the volume varies relying on the variation in catches during peak or off-season. Virtually most of the fish (Near about 90%) is locally supplied and about 10% brought from Mymensingh city. The amount of marine fish and freshwater fish supply amount is near about 5% and 95% respectively. It is estimated that about 25% of fish supplied in markets is Indian major carps, 10% exotic carps, 12% other carps, 5% marine, 14% catfish, 10% snake-heads, 9% small indigenous fish and 10% tilapia. Market structure, species quality, size and weight have an influence on the price of fish and it was obtained from the survey that the price of fish increases per kilogram with size and species wise. From this study it is obtained that marketing structure, quality, size and weight of species have an direct influenced on the fish prices.

Keywords: fish marketing channel, fish species**,** profit margin and Livelihood, Iswarganj, Bangladesh

1. Introduction
Bangladesh is full of fisheries resources. This sector plays a significant role in nutrition, employment generation and foreign exchange earnings. According to DoF (2016-2017) fisheries sector contributed 3.61% to the GDP and 24.41% to the country's total agriculture products. This sector providing 60% of the protein requirement from animal sources and also offering a livelihood to more than 20 million people directly or indirectly. On an average, each year this sector is generating around 0.6 million new employment. In 2016-2017, the fish production in the country has been estimated to be 4.134 million tons of which 1.16 million tons (28.14%) were from inland open waters, 2.3 million tons (56.44%) from inland closed waters and 0.64 (15.42%) million tons from marine waters (Fisheries Statistics of Bangladesh, 2016-17). A large number of people, many of whom living below the poverty line, find the employment in the domestic fish marketing chain in the form of farmers, processor, traders, intermediaries, day labours and transporters (Ahamed, *et. al.*, 1993) [1].
In Bangladesh, fish marketing is almost exclusively maintained by the privet sector. Four distinct tires viz. primary, secondary, higher secondary and consumer market of marketing systems are observed in the process of distribution of fishes in Bangladesh. Fish collectors commonly known as mahajans or aratdar s procure fish from the catchers, with the help of local brokers who get a profit margin or commission from the mahajans. However, the most serious marketing difficulties seem to occur in the remote communities which lack of transport, ice, poor road facilities and where the farmers are in a particularly weak position in relation to intermediaries (Rahman, 1997) [7]. Many varieties of freshwater fish (139 species) are available in Mymensingh district (Chandra, 2009) [9]. The present study is concerned with the existing marketing system, Available fish species and livelihood of fish traders in ishwarganj upazila of Mymensingh district to identify marketing inefficiencies

that having adverse impact on farmers, fishermen and poor traders. The study was carried out for more production of fishes and developing fish marketing system.

2. Materials and Methods

2.1 Location of the study

The study site was Iswarganj upazila under Mymensingh district. It's located at the east part of Mymensingh city, just beside the Gauripur, Nandail and Kendua upazila. It is one of the most common, oldest and well known fish market in Mymensingh district.

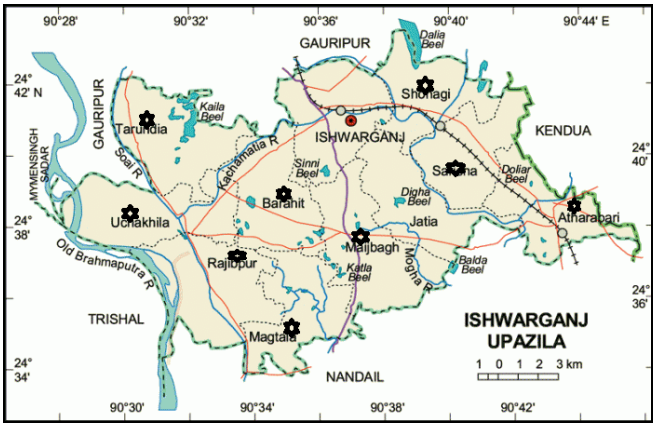

Fig 1: Sampling site of Ishwarganj Upazila

2.2 Methodology

The data was collected over one year from July 2016 to June, 2017. For the collection of data several survey techniques (Goon P.K *et. al.* 2012) was adopted were followed:

2.3 Data Collection

Field surveys were used for the collection of primary data. For the confirmation of the secondary data, primary data were used. The study area was visited officially to check on standards in term of fish availability, production system, livelihood of fish traders and marketing information. By using questionnaire interview and direct observation, primary data were gathered for this study and secondary data collected from government organizations, Department of Fisheries (DoF).

2.4 Questionnaire Interviews

Fifteen fish traders were choosen as the most suitable in the each area through careful inspection for the questionnaire interviews. Questionnaires were checked in the field before interviews. At the market center, traders were interviewed through a formal conversation for this purpose. Information about fish marketing, pricing policy, trading actions, constrains of fish marketing channel and socio-economic conditions of fish traders are the consequences of the interviews.

3. Results

3.1 Fish species

Mymensingh region is recognized as the fisheries zone of our country. Many varieties of freshwater fish (139 species) are available in Mymensingh district (Chandra, 2009) [9]. It is estimated that most of the fish sold in the Iswarganj markets are Indian major carps, catfish, tilapia, exotic fish and small indigenous species. This is shown in Figure 2.

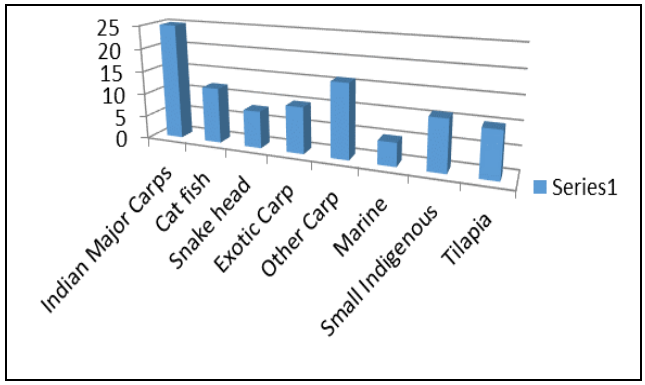

Fig 2: Fish species in Iswarganj of Mymensingh

3.2 Fish marketing System

In the fishery trade, fish marketing has an important role. In Ishwarganj upazila there are three (Table 1) major value chains are identified for major Indian carps, pangas and tilapia.

Table 1: Fish marketing system in Iswarganj upazila

Value chain – 1	Fish Farmer – *Aratdar* – *Paiker* - Retailer – Consumer
Value chain - 2	Fish Farmer – *Nikari* – *Paiker* – Aratdar – Retailer – Consumer
Value chain - 3	Fish Farmer – *Aratdar* – Retailer – Consumer

3.3 Marketing functions

Grading

Most fish are graded on the basis of size (weight). Fish are graded into three categories (Table 2) namely, small, medium and large depending on size (weight). However, weights across species vary depending on species graded

Table 2: Fish grading system in Iswarganj upazila

Species	Basis	Specification
Tilapia	Weight	Large: 400 gm above, Medium: 200 gm to 350 gm, Small: Less than 150 gm
Catla	Weight	Large: 3.0 kg above, Medium: 1.5 kg to 3 kg, Small: Less than 1.5 kg
Rohu	Weight	Large: 2.5 kg above, Medium: 1.0 kg to 2.5 kg, Small: Less than 1 kg
Pangas	Weight	Large: 2.0 kg above, Medium: 1 kg to 1.5 kg, Small: Less than 1 kg

Storaging

The storage function is primarily concerned with making goods available at the desired time. It enables traders to obtain better prices for their products. Being a highly perishable commodity, fish requires extremely specialized storage facilities matching the seasonal demand. Other intermediaries use only ice to transport fishes from one place to another. Surprisingly, no refrigerated van is used in Bangladesh to

transport fish. Live pangas is transported from one place to another place using water in the plastic drums.

Transporting

Fish farmers and intermediaries use various modes of transportation (Table 3) such as van, rickshaw, truck, passenger bus, pickup, Nasimon (locally made pick-up type van for transporting passengers and goods), head load etc, to transfer products from the producing areas to the consumption centres. Ice is used while transporting the fish as most carriers are non-refrigerated. Rohu, catla and other assorted fish often are sold in the urban areas with refrigerated vans to a very limited scale by the DoF, BFDC and some private firms.

Table 3: Fish transporting system in Iswarganj upazila

Farmer	Rickshaw/Van: Three wheel non-mechanized man-driven carrier
	Nasimon: Locally made mechanized small lorry/van
	Pickup: Small lorry
Paiker	Bus: Passenger bus (Bottom cargo holder)
	Truck: Cargo carrier (Non-refrigerated)
Retailer	Head load: Container carry on head
	Truck: Cargo carrier (Non-refrigerated)
	Rickshaw/Van: Three wheel non-mechanized carrier

Financing

Most of the fish farmers/ fishermen, aratdars, paikers and are self-financed (Table 4). Other sources of finance for the farmers are banks, friends and relatives, and dadon. Aratdars and paikars also borrow from banks, NGOs, and friends and relatives.

Table 4: Financing system in Iswarganj upazila

Sources of finance	Market participants (%)			
	Farmer	*Aratdar*	*Paiker*	Retailer
Own fund	70	85	80	75
Bank	10	5	13	0
NGO	5	5	5	15
Friend and relatives	14	5	2	10
Dadon from *Aratdar*	1	0	0	0
Total	100	100	100	100

Market information

Physically visiting the markets and use of telephone/mobile phone are the common sources of collecting market information (Table 5) for all value chain actors.

Table 5: Fish market information in Iswarganj upazila

Sources of market information	Farmer	Depot owner	*Aratdar*	*Paiker*	Retailer
information from the market	75		58	73	92
Fellow traders	51		45	43	25
Email/Internet	0		0	0	0
Telephone/mobile	60	100	90	87	55

Packaging

'Bamboo, tied with rope and polythene is used by farmers, paikers and retailers of major carps, pangas and tilapia fish for packaging (Table 6). Agents also use plastic drum to transport fish (mostly pangas) in live form. Now a day's 'plastic crate' is commonly used by all types of intermediaries in Bangladesh.

Table 6: Fish packaging system in Iswarganj upazila

Sl. No.	Packaging practices	Using materials	Capacity
01	Basket	Rope, Polythene and Bamboo	30-40 kg 25-30 kg
02	Drum	Plastic	30-35 kg 20-25 kg
03	Crate	Plastic, Polythene	20-30 kg

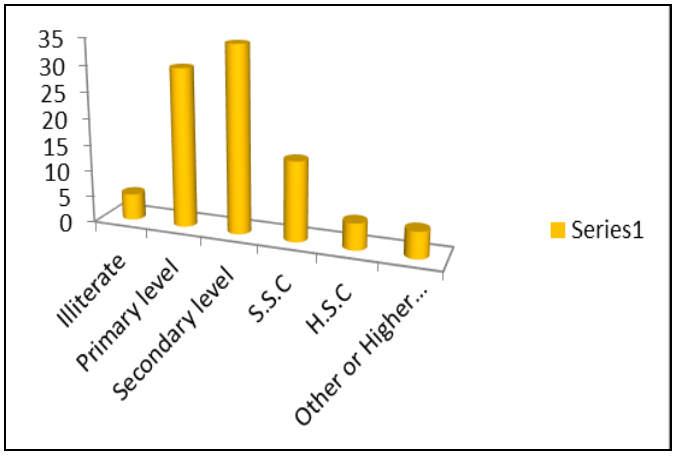

Fig 3: Educational Quality of Fish Traders in Ishwarganj upazila

3.4 Educational Quality of Fish Traders

In Iswarganj, fish traders are near about 5% illiterate, 30% primary level, 35% secondary level, 15% S.S.C. level, 5% H.S.C. level and 10% other or higher educated

3.5 Price of Fish

The price of fish varies irregularly and more widely than other agricultural commodities. In this market, the main buyers are retailer and consumer. The price (Table 7) of fish is usually set through open auction by the Aratdars and wholesalers.

Naturally, the price of fish depends on market structure, location, species, quality, size and weight. The price is also influenced by supply and demand and there are generally seasonal variations in prices with the highest in summer (March to May) and the lowest in winter (November to January), during the fish harvesting season (Rahman *et al*, 2009) [7].

Table 7: Fish price in Iswarganj upazila

Fishes		Landing (Kg/year)	Farm gate price (kg/yr)	Wholesale price (Tk/Kg)	Retailer price
Exotic Fishes	*Pangasius pangasius*	18000	80±10	90±10	110±10
	Tilapia mossumbicus	12000	90±10	100±10	120±10
	Hypophthalmichthys molitrix	9000	100±20	120±20	150±20
	Aristichthys nobilis	4500	120±15	130±15	160±15
	Cyprinus carpio	5000	130±10	150±10	180±10
	Oreochromis niloticus	4000	150±20	160±20	190±20
	Clarias gariepinus	4500	350±10	370±10	400±10
	Ctenopharyngodon idellus	6000	120±10	130±10	150±10
	Puntius gonionotus	9000	130±10	140±10	160±10
Indigenous Fishes	*Labeo calbasu*	4500	160±15	180±15	200±15
	Catla catla	12000	180±10	200±10	220±10
	Labeo rohita	14000	180±20	200±20	220±20
	Labeo bata	11000	175±10	220±10	250±10
Live fishes	*Anabas testudineus*	7500	220±20	230±20	250±20
	Clarias batrachus	4000	450±10	480±10	510±10
	Heteropneustes fossilis	8500	300±15	320±15	350±15
	Ompok pabda	7000	450±20	500±20	550±20
	Mystus vittatus	6500	200±20	220±20	250±20
	Channa punctatus	3500	160±10	180±10	200±10

4. Constraints of fish marketing and recommendation

The state of landing and wholesale facilities is usually not sufficient enough for handling of a commodity which subjected to rapid decay like fish. Main constraints of fish marketing are related to infrastructure, plant management and institutional management aspect. Problems are particularly serious in certain inaccessible area where inadequate transportation and distribution facilities, lack of insulated and refrigerated fish vans, resulting in considerable wastage of ice; lack of electricity present and where open trucks are the main fish carriers.

Specific suggestions which are needed to improve marketing system are as follows:

- Improvement of existing fish market structure
- Establishment of ice-plants, cold-storage and preservation facilities
- Improvement of fish transport, handling facilities
- Establishment of modern wholesaling facilities
- Improvement of sanitation, hygienic condition, drainage, washing facilities and sufficient auction places
- Introduction of mechanical weighing equipment
- Proper electric supply
- Increasing fish supply through improved culture practice
- Financial and technical assistance

5. Conclusion

For increasing the productivity of fishers and making certain their livelihood security, an efficient fish marketing system is a vital requisite. Though Iswarganj is not competitive in view of the huge gap between demand and supply and also suffering from ill-management, unsatisfactory state of market structure, unhygienic and unscientific conditions; the fish marketing system in this market is quite efficient. Despite many problems this market is still regard as an important and one of the important fish market in Mymensingh District. So, government intervention and public-privet relationship is necessary for commercial implementation and improvement of the existing system of fish marketing in Iswarganj upazila.

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