



Eco-friendly Fish Marketing Systems at Different Fish Markets in the Rajshahi City Corporation Area, Bangladesh

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Abstract

The present investigation reports on the fisheries status and marketing systems in Shaheb Bazar, Luxmipur, New Market and Shalbagan fish markets under the Rajshahi City Corporation Area. More than 35-40 species of fishes under 8-10 orders and the Shaheb bazaar fish market. About 30 species of fishes under 7-8 orders are also found in and Shalbagan and Luxmipur fish market, respectively the limitations of the fish markets have been pin-pointed and their methods of improvement suggested.

Keywords: Eco-friendly, Marketing systems, Rajshahi City Corporation

Introduction

The fishes are the most abundant and diverse of the major vertebrate groups, and their diversity is reflected in the great number of living species. Eschmeyer (1998) lists 23,250 valid fish species. In the agro-based economy of Bangladesh, fisheries and aquaculture are important as source to supplement animal protein, employment generation and earning foreign exchange. During 2009-2010 fiscal years, the fish production was 2899198 mt that contributed 3.74, 22.23 and 2.70% to the GDP, agri-cultural sector and export earning respectively. Approximately 14 million people are directly or indirectly involved in the fisheries sector for their livelihood (Khan, 2011).

A market is a group of a buyers and sellers with facilities for trading with each other. Sellers and buyers are connected by four flows in the market. The sellers send their products and communicate to the markets; in return they receive money and information. Marketing is the performance of all business activities including the creation of form, time, place and possession utilities.

A fish market is a place where people gather for buying and selling of fish and fish products that may be periodic or regular. Fisheries marketing encompass all the activities and agencies involved in the movement of fish or fish products from the individual fisherman, fish farms or industries to final consumers or end users.

Very few works have been done on the market systems of fishes in Bangladesh (Rokea, 1977 and Rahman, 1994). The present study was chiefly aimed at the following objectives:

- a. To record the fish species found in four important fish markets of Shaheb Bazar,

Luxmipur, New Market and Shalbagan under the Rajshahi City Corporation Area.

- b. To know the fish ecosystem, fisherman and marketing channels of fishes
- c. To have an idea about the gross marketing systems
- d. To observe the infrastructural facilities and healthy environment of the fish markets
- e. To identify the existing problem and suggest solutions to them

Material and Methods

The survey was conducted in four important fishmarkets of the Rajshahi City Corporation Area, e.g. Shaheb Bazar, Luxmipur, New Markets and Shalbagan. The markets were visited from May, 2010 to January, 2011. The methods that were employed for this investigation included direct observations, interviews with the concerned people, photographs and diagrams.

Standard textboxes like Hamilton (1822) and Rahman (1989) were followed for the identification of the fisheries species.

Results and Discussions

The infrastructures of the fish markets are shown in Figures 1 to 2 & the infrastructural facilities and environment of the fish markets are shown in the Table 1.

Shaheb Bazar fish market

The Shaheb Bazar fish market is situated in Boalia Thana under Rajshahi district. It is 100 m far from the western side of the Shaheb Bazar zero point.

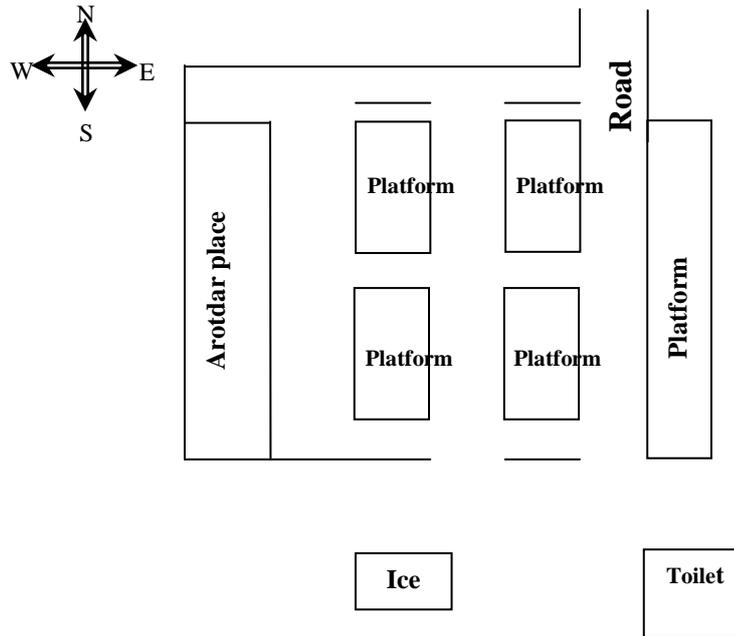


Fig.1: Infrastructure of the Shaheb Bazar fish market

The Shaheb Bazar Fish Market has a big platform. Various types of fishes are available here. Most of them come from Charghat, Bagha, Puthia, Durgapur, Mohonpur, and Baghamara. Hilsha, Rita, Chital and other fishes of rivers come from Dhaka, and Mymensingh. The waste management system of the Shaheb Bazar is unhealthy. The drainage system is poor, and sputum, residue of cigarettes, etc. are always found in the drains. There are four ice mills. Everyday 100 blocks of ice are needed.

Shalbagan fish market

The Shalbagan fish market is situated in Boalia thana under Rajshahi district. It is situated at the northern side of the Polytechnic Institute, Shalbagan, Rajshahi. There is no particular platform in the shalbagam fish market. Here the fishes are sold on the plastic sheets which are spread on the earth/land. There is no waste management system. Residue of the fishes are thrown nearby. Besides, the polluted water is also found here. There is no drainage system in the market. There is no ice mills or store room.

Luxmipur fish market

The Luxmipur fish market is situated in Rajpara thana under Rajshahi district. It is located near the North-western side of the Luxmipur circular road. The condition of the fish market is worse. There is

no particular platform. Fishes are sold on the roadside. Residues of the fishes are thrown away nearby which are eaten by the dogs and crows. There is no ice mills or store room. There is no separate drainage system and the fishermen use the drains which are made for the public. Fishes are brought here from the river Padma, Court Bazar, Charghat, Bagha, Mohonpur, Baghmara, and Durgapur.

New Market fish market

The fish landing centre is situated at the western side of the Rajshahi New Market. The Bangladesh Fisheries Development Corporation established this landing centre. There is no drainage system where the fishes are sold. The offals of the fishes are thrown away nearby. Dogs and crows are often found roaming there. Besides, the selling of fishes at the roadside, the potentiality of spreading various diseases by pollution is very high. There are three platforms inside the New Market fish market each of which is 15 feet long and 4 feet wide. The market has its own ice mills and store room. One hundred blocks of ice are needed everyday. Generally the Hilsha, pangus and rays, etc. are brought here for sale from Potuakhali, Barisal, Dhaka and Mymensingh. There is no drainage system here.

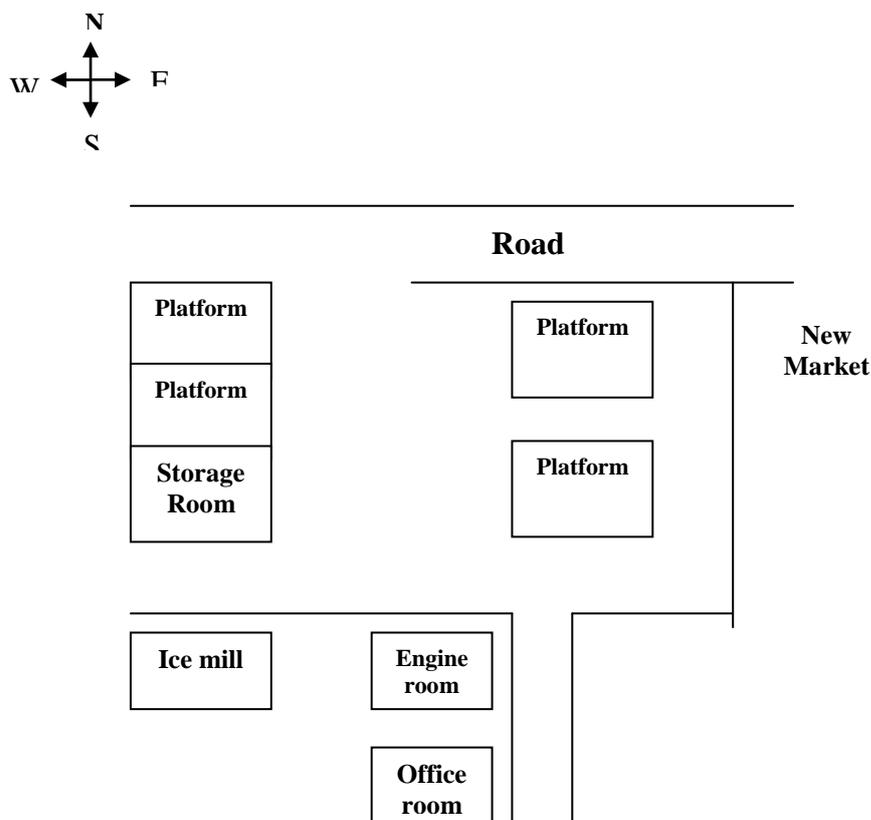


Fig.2: Infrastructure of the New Market fish market

This way which is imported from Dhaka, Barisal, and Mymensingh, is mainly found in the New market fish market. Beside these other varieties of fishes are also more or less found here. Maximum varieties and bigger size of fishes are found in the Shaheb bazaar fish market, Since it is situated at the heart point of Rajshahi and bigger than any other

markets of Rajshahi. Bigger size of fishes are available in other markets, though it is more common in Shaheb bazar. Generally the cypriniformes order of fishes are found in these markets, they are commonly cultured here. Now a days the number of SIS fishes is decreasing due to the drying up of rivers and shortage of waters.

Table 1: The infrastructural facilities of the fish markets

| Items | Shaheb Bazar | Shalbagan | Luxmipur | New Market |
|---------------------------|------------------|--------------|--------------------|----------------|
| Area | 33 decimal | 66 decimal | 4.95 decimal | 4.95 decimal |
| Floor | Made of concrete | Made of Mud | Made of Cement | Made of Cement |
| Platform height | 2-5 feet | Absent | 3 feet | 2 feet |
| Roof | Concrete | Absent | Absent | Cemented |
| Water supply | Sufficient | Insufficient | Sufficient | Sufficient |
| Electricity supply | Present | Absent | Absent | Present |
| Drainage system | Developed | Absent | Not well developed | Developed |
| Ice mill | Present | Absent | Absent | Present |
| Toilet facilities | Present | Present | Present | Present |

Both wholesale and retail markets are available at Shaheb Bazar. The market is open throughout the week and activities start early in the morning (6.00-8.00am) and continue up to 9.00 pm. Luxmipur is a retail market remaining open seven days a week and with activities starting at 8.00 am and continuing up to 10.00 pm. The New Market fish market starts at 7 am and continues up to 10.00 pm.

It remains open five days a week formally and two days informally. At Shalbagan, marketing activities start at 7.00 am and continue up to 6.00 pm. This is both a wholesale and retail market, and remains open throughout the week. Fishes are graded according to their size and the species. Small fishes are not graded. The marketing channels in different fish markets are shown in Figure 1.

Fishermen and fish Eco-systems

Fishermen generally culture fishes in their own ponds and sell them. Fishermen cannot collect much fish due to the lack of water in the river. Those people, who buy fishes from the fisherman and sell it to the whole sale traders, become more benefited than the others. They are called Bepari, since there is no direct relation between the

fishermen and whole sale traders, the middlemen have the most of the benefits. In this case, to make the fishermen and whole sale traders benefited and to get fishes at local price, government support is needed. The fisheries species available and their price in various fish markets are presented in Table 2. The cypriniform fishes constitute the lionshare of the fishes.

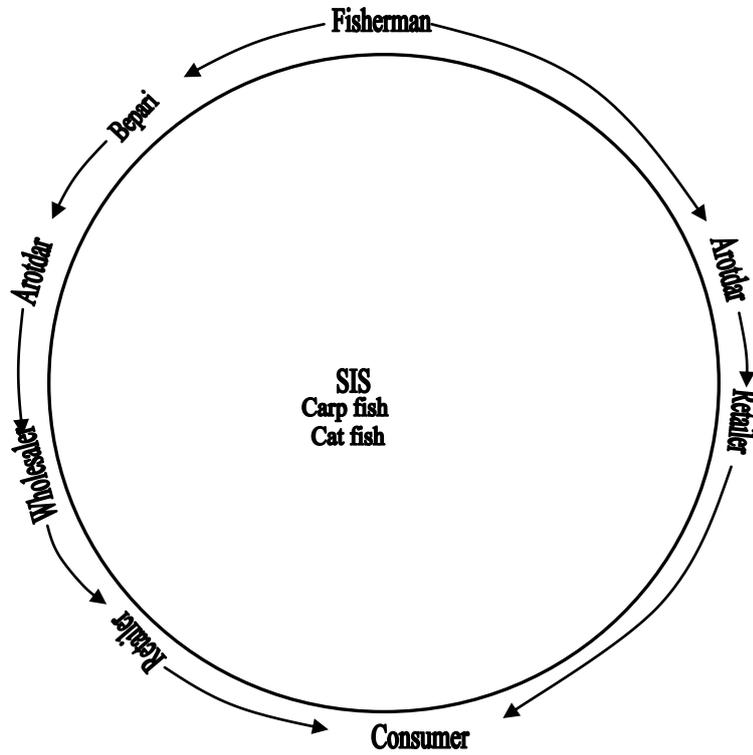


Fig. 3: Fish marketing channel of different fishes in various fish markets

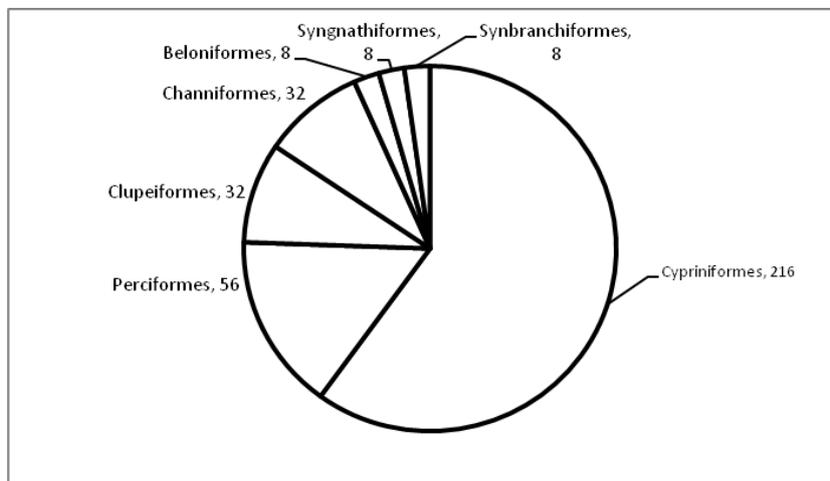


Fig. 4: Pie-chart showing the order wise distribution of fishes

Table 2: Systematic position of fish species and their price at different market in Rajshahi City Corporation.

| Order | Family | Local Name | Scientific Name | Market Name and Price | | | | | | | | | |
|-------------------|-------------------|--------------|-------------------------------------|---------------------------|--------------------------|------------|------------|------------|------------|------------|------------|-----|---|
| | | | | Shaheb Bazar | | Shalbagan | | Laxmipur | | New Market | | | |
| | | | | WP (Tk) | RP (Tk) | WP (Tk) | RP (Tk) | WP (Tk) | RP (Tk) | WP (Tk) | RP (Tk) | | |
| Clupeiformes | Clupeidae | Ilish | <i>Hilsa Ilisha</i> | 450 | 560 | 450 | 470 | - | - | - | - | | |
| | | Kachki | <i>Corica soborna</i> | 250 | 270 | 240 | 270 | 400 | 420 | - | - | | |
| | | Chapila | <i>Gonialosa manmina</i> | - | - | - | - | - | - | 370 | 410 | | |
| Channiformes | Channidae | Chital | <i>Notopterus chitala</i> | 350 | 370 | - | - | - | - | - | - | | |
| | | Gozar | <i>Channa marulius</i> | 300 | 320 | - | - | - | - | - | - | | |
| | | Shol | <i>Channa striata</i> | 400 | 450 | 450 | 470 | 500 | 570 | - | - | | |
| | | Taki | <i>Channa punctata</i> | - | - | 170 | 200 | 180 | 230 | 220 | 250 | | |
| Synbranchi formes | Mastacem belidae | Baim | <i>Mastacembelus armatus</i> | 500 | 520 | - | - | - | - | - | - | | |
| Syngnathiformes | Syngnathidae | Kumirer Khil | <i>Microphis deocata</i> | - | - | - | - | - | - | 180 | 200 | | |
| Perciformes | Chichlidae | Nilotica | <i>Oreochromis niloticus</i> | 120 | 140 | - | - | 120 | 160 | 130 | 160 | | |
| | | Gobiidae | Bailla | <i>Awaous guamensis</i> | 200 | 230 | 280 | 300 | 250 | 280 | - | - | |
| | | Mugilidae | Khorsula | <i>Rhinomugil corsula</i> | 160 | 180 | - | - | - | - | - | - | |
| | | Anabantidae | Koi | <i>Anabas testudineus</i> | 410 | 430 | 350 | 380 | 250 | 290 | - | - | |
| | | Sciaenidae | Poa | <i>Otolithoides pama</i> | - | - | - | - | - | - | 220 | 240 | |
| Siluriformes | Chacidae | Chaka | <i>Chaca chaca</i> | - | - | - | - | - | - | 360 | 380 | | |
| Beloniformes | Belonidae | Kakila | <i>Xenentodon cancila</i> | - | - | - | - | - | - | 170 | 200 | | |
| Cypriniformes | Cyprinidae | Pangas | <i>Pangasius pangasius</i> | 100 | 120 | 110 | 130 | 100 | 120 | 120 | 150 | | |
| | | Mola | <i>Amblypharyngodon mola</i> | 320 | 340 | - | - | - | - | - | - | | |
| | | Mrigal | <i>Cirrhina mrigala</i> | 110 | 140 | - | - | - | - | - | - | | |
| | | Rui | <i>Labeo rohita</i> | 160 | 200 | 160 | 200 | 160 | 200 | 160 | 190 | | |
| | | Silver carp | <i>Hypophthalmichthyes molitrix</i> | 100 | 120 | 150 | 170 | 140 | 170 | 140 | 160 | | |
| | | Punti | <i>Puntius chola</i> | 220 | 220 | - | - | - | - | - | - | | |
| | | Katol | <i>Catla catla</i> | 180 | 200 | 180 | 210 | 180 | 200 | 190 | 210 | | |
| | | Baspata | <i>Devario devario</i> | 500 | 520 | 500 | 520 | - | - | - | - | | |
| | | Kalibaus | <i>Labeo Kalbasu</i> | 170 | 190 | 170 | 190 | 170 | 200 | - | - | | |
| | | Bata | <i>Labeo bata</i> | 180 | 200 | 180 | 200 | - | - | - | - | | |
| | | Shor puti | <i>Puntius sarana</i> | - | - | - | - | 140 | 170 | - | - | | |
| | | Darkina | <i>Esomus danricus</i> | - | - | - | - | 300 | 320 | - | - | | |
| | | Sisoridae | Bagridae | Baghair | <i>Bagarius bagarius</i> | 200 | 220 | - | - | - | - | - | - |
| | | | | Tengra | <i>Batasio batasio</i> | 350 | 380 | 380 | 400 | - | - | - | - |
| | | | | Rita | <i>Rita rita</i> | 200 | 220 | 160 | 180 | 160 | 180 | - | - |
| | | Ayr | <i>Mystus aor</i> | - | - | 550 | 570 | 550 | 570 | - | - | | |
| | Heterop neustidae | Shingo | <i>Heteropneustes fossilis</i> | 540 | 570 | 500 | 520 | 500 | 520 | - | - | | |
| | Clariidae | Magur | <i>Clarius batrachus</i> | - | - | 500 | 520 | - | - | - | - | | |
| | Cobitidae | Boal | <i>Wallago attu</i> | - | - | 480 | 510 | 480 | 500 | - | - | | |
| | | Rani | <i>Botio dario</i> | - | - | - | - | 360 | 380 | - | - | | |
| | Schilbeidae | Bacha | <i>Eutropiichthyes vacha</i> | - | - | 400 | 420 | - | - | - | - | | |

The reasons of availability of cypriniform fishes that they are easily culturable in the pond, lake, haor, baor etc. and much water is not needed for the culture. But the syngnathiforms, beloniforms need much water for culture and therefore, they are less available.

In Bangladesh, the need for protein is chiefly met by the fish. But the price of fish is increasing due to middlemenschship. Drying up of rivers is another important reason. So, the government should take necessary steps in this regard. Though the fish markets of Rajshahi are large, the surroundings and environmental condition are not up to the mark. The tendency of spreading infectious diseases are more likely under this situation.

Fishes have the enormous importance to humans as food and recreation. According to Moyle and Moyle (1995), four alternative economic values that can be offered for fish are:

(1) market values, (2) ecosystem values, (3) existence values, and (4) intergenerational values. Traditional market oriented economists often recognize these values as valid. However, fishes have also aesthetic, values, cultural values, scientific research values, and teaching values. Currently, the cultural values of fish encompass scientific research and educational values.

Recommendations

A perusal of the facts presented reveal that there are several problems associated with the markets. The following recommendations are set down against the problems:

- i. Sufficient physical facilities should be developed
- ii. Ice mills should be established in Luxmipur and Shalbagan fish markets for preservative free fish
- iii. Sufficient electricity supply should be ensured for healthy city
- iv. Overall sanitation and hygienic conditions should be maintained
- v. Vehicle parking facilities should be improved
- vi. Modern weighing system should be introduced and scrupulously maintained
- vii. Comprehensive monitoring system by the government should be developed
- viii. Modern systems of fish display should be introduced

Conclusion

In markets commodities, and buyers and sellers are in direct competition with each. Our fish markets are far below the world standard. The components of the marketing system may be categorized into five subsystems: producer, flow, functional, consumer and environmental and these work in harmony with one another. It is very much to be solicited that the fish handling sectors and the fish markets as well as the marketing systems work in concert with each other to achieve the modern standards in the near future.

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Reference

- Eschmeyer, W. N. 1998. *Catalog of Fishes*, volume 3. California Academy of Sciences, San Francisco, USA.
- Hamilton, F. 1822. *An Account of Fishes Found in the River Ganges and its Branches*. Archibald Constable and Company, Edinburg. vii+405pp.
- Hossain, M. M. 1994. Fish Marketing in Bangladesh. *Proceedings of INFOFISH/LKIM, FAO Regional Workshop on Fish Marketing in Asia*, 26-29 September, 1994, Kualalampur, Malaysia.
- Khan, M. R. 2011. Techniques for the improvement of fisheries management and conservation of public health. In: *Proceedings of the National Fisheries Week*, Directorate of Fisheries, Dhaka Bangladesh, pp.13-20.
- Moyle, P. B. and Moyle, P.R. 1995. Endangered Fishes and Economies: International Obligations. *Env. Biol. Fish.* 42.
- Rahman, M. A. 1989. *Freshwater Fishes of Bangladesh*. Zoological Society of Bangladesh, University of Dhaka, Bangladesh.
- Rokea, J. A. 1977. Transportation and Marketing System of Native and Exotic Major Carps of Rajshahi district, M.Sc. Project work, Department of Zoology, University of Rajshahi, Rajshahi, Bangladesh.