



# International Journal of Life Sciences Biotechnology and Pharma Research





Research Paper

# MARKETING CHANNEL AND EXPORT POTENTIALITY OF FRESHWATER MUD EEL (*MONOPTERUS CUCHIA*) OF NOAKHALI REGION IN BANGLADESH

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The present study has been undertaken to create a better understanding of the current marketing flow and trading practices for freshwater eel in Bangladesh. A survey was conducted from November 2009 to July 2010 through collecting information using a semi-structured questionnaire among the cross section of marketing operators in the south East part of (Noakhali) of Bangladesh. This paper explores market chain issues for the freshwater eel (*Monopterus cuchia*) trade, a high-value export fishery involving nearly 15 countries in the world, with high demand in China, Malaysia, Singapore, Japan and Taiwan. The marketing system passes through a number of channels from catchers to exporters. A different grading system is involved for marketing of freshwater eel in Bangladesh. It is varied according to the sex and size of the eel in the international market. Freshwater eel marketing was considered as a profitable business by most of the marketing operators. The social and religious restriction on consumption of freshwater eel was also reported as a problem that hinders the business and prevents obtaining realistic prices in the domestic market. For this reason, in local market of Noakhali freshwater eel is not available.

**Keywords:** Marketing channel, Export potentiality, Freshwater mud eel, *Monopterus cuchia*

## INTRODUCTION

Among different species of eels available in Bangladesh *Monopterus cuchia* is common freshwater species, which is known as mud eel. It belongs to the family Synbranchidae of the order Synbranchiformes. It commonly occurs in the freshwater of Bangladesh, Pakistan and

throughout India (Jingran and Talwar, 1991). They often spend their daytime hiding under stones and mud or having a burrowing habit (Nasar, 1997). The gills of *Monopterus cuchia* are reduced and the fish has a pair of air breathing organ in the form of a sac on two sides of the head. In Bangladesh, the tribal people and a few of other

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castes eat this fish. It is commercially important due to its high demand for export. Freshwater eel is generally available in open water resources such as rivers, haors, baors, beels, canals and floodplains with natural care. It can thrive in various adverse conditions such as low oxygen levels, high temperature and shallow water. Though the fish is only consumed by tribal people in Bangladesh, it is however, commercially important due to its high demand for export.

Recently abundance of this species in nature has declined due to heavy fishing pressure, habitat destruction, aquatic pollution and indiscriminate uses of pesticides. It is now a vulnerable species in Bangladesh. It is necessary to determine the causes of its vulnerable condition to undertake any management program to conserve the species.

Exporters collect freshwater eel from Noakhali on an average about 28,000 kg per month. According to Chambers (1992), the area in which a business survey is to be carried out depends on the particular purpose of the study and possible cooperation from the local people. So selection of Noakhali as the study area is much more sensible to know the marketing system of freshwater eel. The specific objectives of this study are to know the 1) availability, 2) marketing channel and 3) export potentiality of freshwater eel in Noakhali district.

## **MATERIALS AND METHODS**

### **Site Selection**

Noakhali district is situated in Chittagong division with an area of 3600.99 sq km and bounded by Comilla district on the north, the Meghna estuary and the BOB on the south, Feni and Chittagong

districts on the east, Lakshimpur and Bhola districts on the west. The district is renowned for fish culture and production. Closed water fish culture has been increased in recent years due to the activities made by Noakhali Aquaculture Extension Project (NAEP) and Noakhali Science and Technology University (NSTU), where both the institutions play a vital role for technology invention, dissemination and for giving logistic supports to the entrepreneurs in fisheries sector. Freshwater eel is available in Noakhali (Hatya upazilla) and it is important for its marketing chain. Considering this point Noakhali was selected for the study.

### **Marketing Channel of Freshwater Eel**

#### **(a) Collector**

They use various type of equipments to catch freshwater eel in our country such as borshi, anta and by hand. In Noakhali there are 15-20 collectors at present.

#### **(b) Seller**

Sellers buy freshwater eel from collectors and sell to the whole seller in reasonable price.

#### **(c) Whole Seller**

Wholesalers buy freshwater eel from collector and sell them to the supplier. The function of the wholesaler is to store the fish.

#### **(d) Supplier**

There are 6-7 suppliers in Noakhali region. They rent a packing center packaging and transport to the airport near the exporter. Suppliers are benefited from wholesaler and exporter because only they know about the real market price of the fish. Market price fluctuates several times because of seasonal variation.

**(e) Supervisor**

There are 5-6 people involve in the marketing chain as a supervisor. Exporter use them to know about the market price of freshwater eel.

**(f) Exporter**

Exporters are also freshwater eel retailers but they do not sell directly to the consumers, they transport eel to sell to other buyers. Freshwater eel has a great demand in China, Japan, Hong-Kong, Taiwan, Thailand, Singapore and USA. Exporters contract with buyer through internet, telephone, or personal relationship.

**(g) Buyer**

There are two types of buyer one who buy dead eel from the eel packaging center and another buy only live eel. There are another buyer is present in packaging center who buy eel for medicinal purpose.

**(h) Consumer**

Consumers buy eel depending on test and size. Eels of Noakhali region are very popular due to their exceptional test.

**Sample Number**

A total of 30 people were selected for questionnaire interviews in different areas of Noakhali region.

**Data Collection**

The data collection as well as field survey was undertaken from November 2009 to July 2010. Data collection methods can be divided into 3 steps; these are: questionnaire interviews with freshwater eel collectors, focus group discussion with exporters and suppliers and cross-check interviews with key informants.

**RESULTS****Freshwater Eel Marketing Systems**

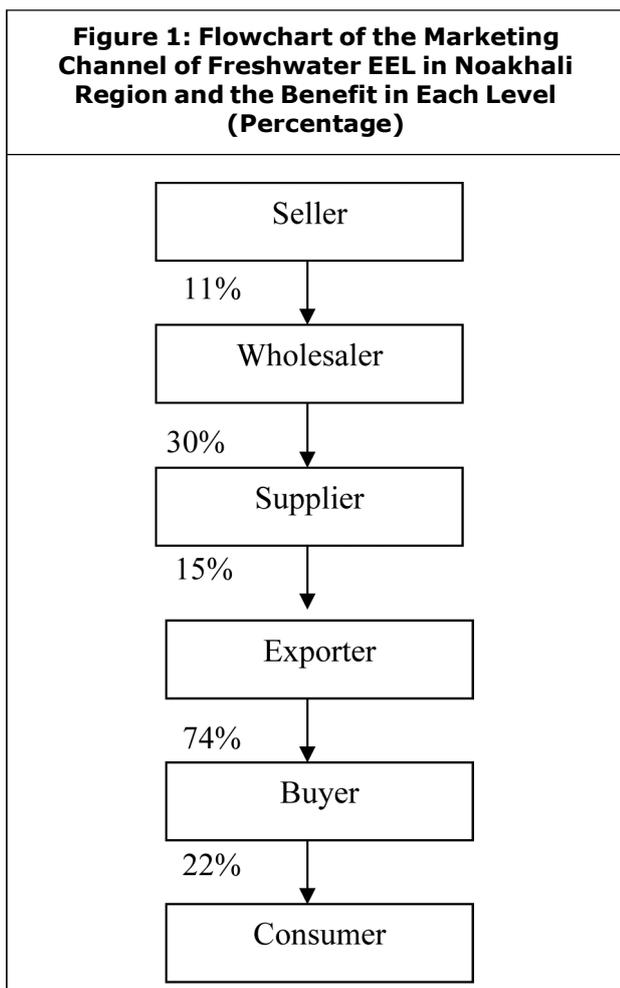
In fish marketing systems, there are a number of people involved in Noakhali (Figure 1). The market chain from collector to consumers passes through a number of intermediaries like local agents, wholesalers, suppliers, suppliers, exporters and buyers. The demand of freshwater eel is high for export but supply is not enough because freshwater eel is now in vulnerable condition.

Farmers never can directly communicate with consumers, market communication normally being made through supplier or local agent. The supplier usually buys the freshwater eel from the local agent but do not seem to have formal agreements with particular producers. Collectors directly sell their fish to wholesalers or through local agents. Local agents are normally based in local markets near to fish farming communities.

Local agents or sellers usually sell the freshwater eel to the wholesale markets. Local agents have informal agreements with wholesalers obliging them to supply certain quantities in spite of the lower profit margins.

Local agents used to carry freshwater eel from remote village where the rate is low. Sometimes seller or supplier take small amounts of *dadon* (credit) from wholesalers to ensure the supply of fish from farmers. *Dadon* is a system of tied credit through which the wholesalers advance money to the suppliers in exchange for the assured sale of fish. Wholesaler commonly use mechanical vehicles (trucks, pickups and microbus) to transport fish from local area to Dhaka packing center which takes 6-7 hours depending on the communication system. Aluminum containers, bamboo baskets with polythene covers are commonly used for keeping the freshwater eel

**Figure 1: Flowchart of the Marketing Channel of Freshwater EEL in Noakhali Region and the Benefit in Each Level (Percentage)**

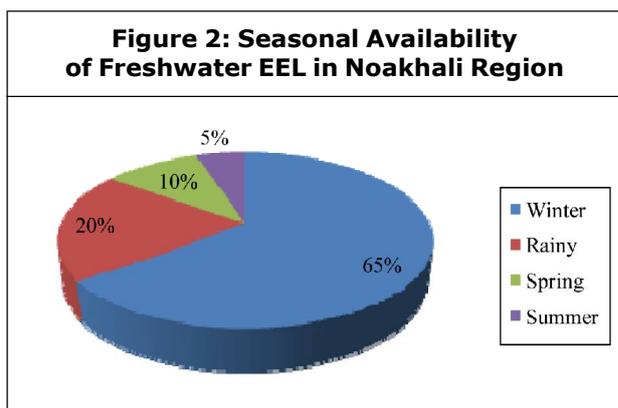


during the transport. Then suppliers use plastic basket and foam box for the preparation of export, they use ice and ginger during packaging to decrease mortality. Finally exporter export by cargo plane .The cargo plane can carry as much as 40-50 tons of live fish.

**Supply of Freshwater eel from Noakhali Region for Export**

Freshwater eel is available in few districts of Bangladesh. Maximum freshwater eel is supply from Sylhet district (120 tons per month). In Noakhali freshwater eel is available in Hatiya upazilla. The supply amount of freshwater eel from Hatiya is 20-30 ton per month. Seasonal availability of freshwater eel in Noakhali region is described in Figure 2.

**Figure 2: Seasonal Availability of Freshwater EEL in Noakhali Region**



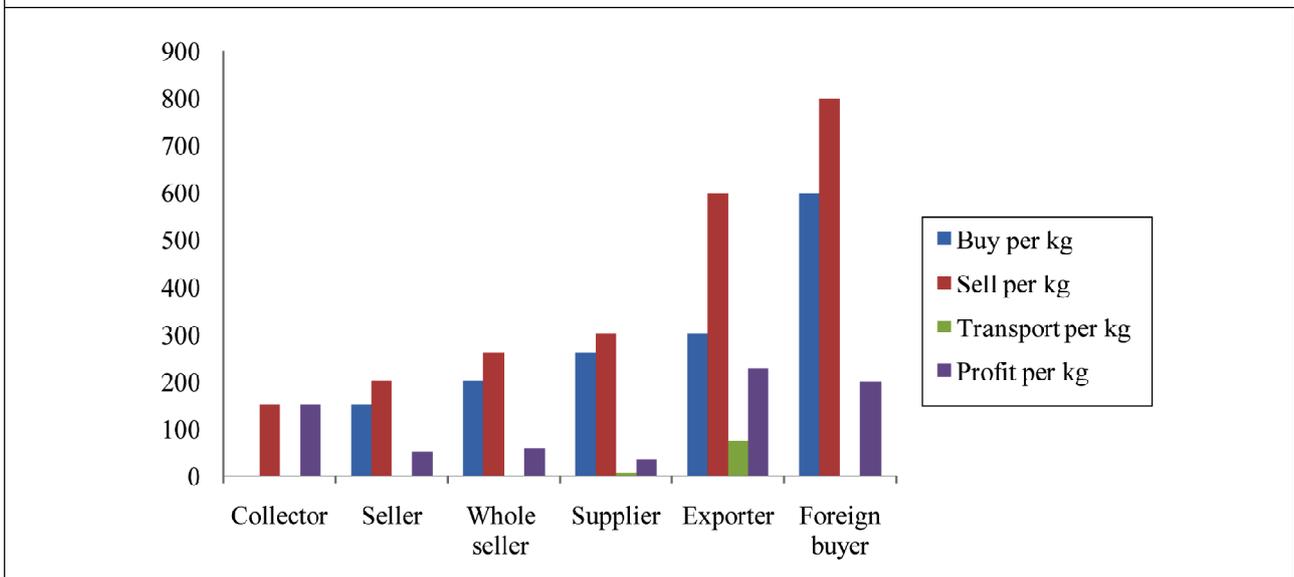
**Price of Various Sizes of Freshwater eel**

There are many factors affecting the price of mud eel in international markets, particularly as the supply of freshwater eel is mainly dependent on wild sources. The supply is affected by the season which is defined by the government of Bangladesh. Supplies of exported eel were also reported by some traders to experience some sort of seasonality during Chinese New Year and Christmas time when the international consumption increases greatly, which ultimately affects the price of the eel in the international market. Traders also reported that they can earn higher profits especially during this time. Any price increase in the international market will ultimately increase the price in the whole sale market. In addition, when the interviewees were asked about the influence of marketing operations over the price, the majority of the collectors claimed their suppliers had the most influence over price, while conversely, the suppliers and exporters had the greatest influence over the price paid (Figure 3).

**Constraints of Fish Marketing**

A number of constraints for fish marketing were reported by suppliers, including higher transport cost, poor road and transport facilities, poor supply of ice, and exploitation by middlemen as a result of lower market prices, inadequate drainage

**Figure 3: Price Variation in Freshwater eel Marketing Channel in Noakhali Region**

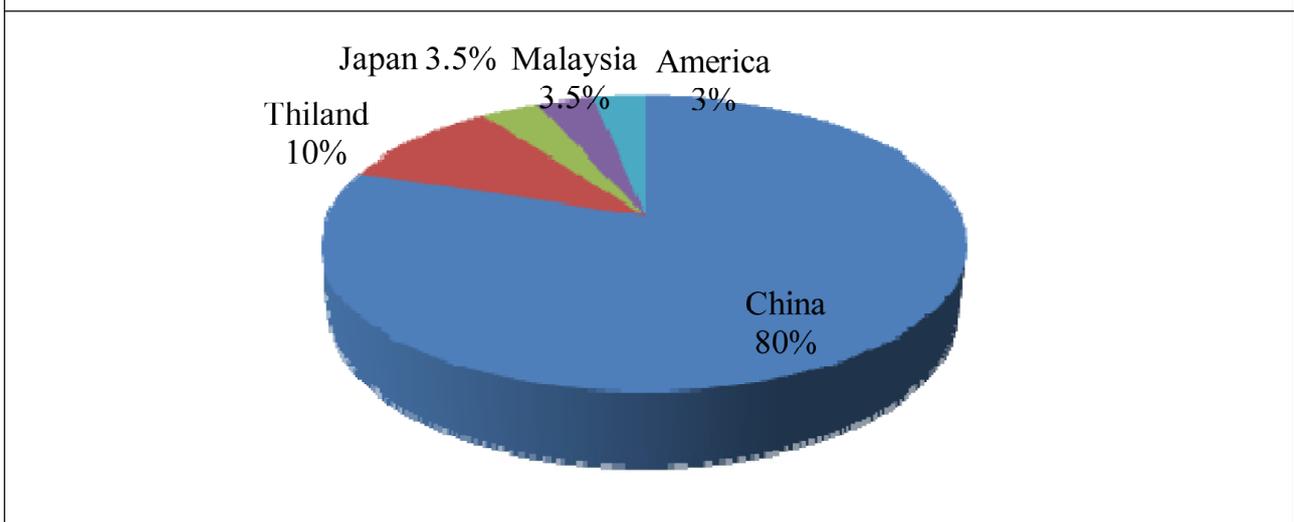


system, poor water supply, poor sanitary facilities and unhygienic condition. According to the supplier, political disturbances have also affected transportation as well as marketing. As a result, the perishable product of freshwater eel get damaged and the supplier sold these as cheap price in Rangamati district, sometimes they even failed to get any revenue due to quality deterioration.

**Export Potentiality of Freshwater eel**

In Bangladesh, freshwater eel is an export fishery that is playing an important role in international markets (Figure 4). It can generate employment directly and indirectly in terms of people employed in the marketing and other associated business. More than 8,000 fishers, traders, transporters and exporters are found to be involved in this sector. Bangladesh began exporting freshwater eel

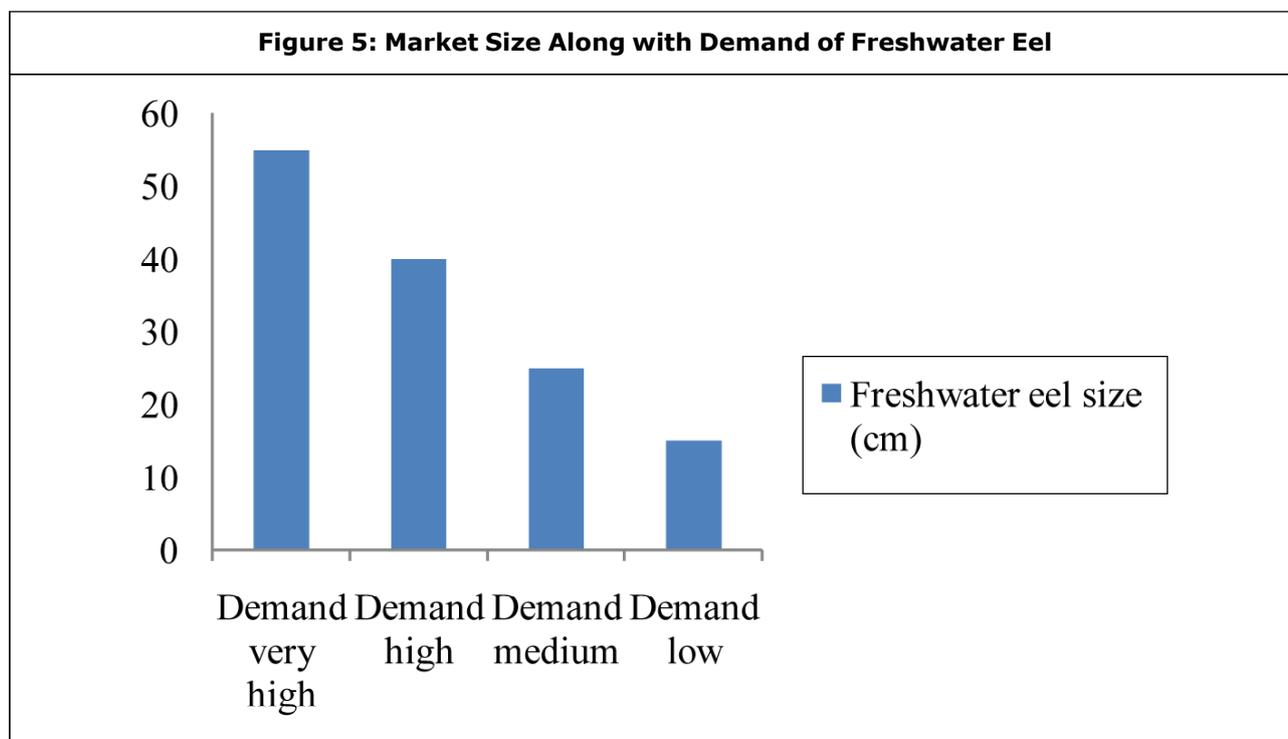
**Figure 4: Export of Freshwater eel to Different Countries from Bangladesh**



around 1987-88 and since 1992 the value of export earnings has been steadily increasing. In 2002, freshwater eel ranked 4 in terms of frozen food export items. Successful development of any fishery not only requires an appropriate natural environment but it also strongly influenced by the market situation. Price fluctuation, lack of buyers and market information, credit problems, high mortality and poor transportation systems in the marketing of freshwater eel have been reported by some researchers in Bangladesh. All of these problems have negative effects on the international markets. There is a need for adequate information about the marketing system and performance for this export fishery product to increase the volume for international export. To achieve an efficient marketing system in a competitive manner it is necessary to identify the existing problems and to correct/improve these wherever they occur in the chain. It will also be useful for the policy makers to identify the existing weaknesses, by providing them with the

necessary information for formulating strategies towards improvement of the eel fishery. In view of this situation, the present study has been undertaken to gain better understanding of the current marketing flow and trading practices in freshwater eel in the greater south western region of Bangladesh. In comparison with other fish or fishery products, the demand for freshwater eel in Bangladesh for domestic consumption is less. Generally, rejected underweight freshwater eel for export and damage eel come to the local rural and urban markets (Rangamati) for domestic consumption. Tribal people buy dead eel for their consumption.

Two types of domestic market so far have been reported by Ahmed (1997), one is nearer to local markets in the vicinity of the fishing village and another one is the consumer markets away from fishing areas. The non-Muslim and tribal people are the main consumers of freshwater eel in Bangladesh. The market price varies with the size (Figure 5) and with the season and the selling



price is normally fixed through bargaining between the seller and consumers.

From 1987, Bangladesh started to export freshwater eel. However, the marine water eel is also taken under export in recent days (Figure 6). Besides live eel, many East Asian and South East Asian countries export different forms of eel and eel products throughout the world.

## DISCUSSION

The fish market chain from collector to consumer passes through a number of intermediaries: seller or local agents, wholesalers, suppliers and exporter. Usually collector never directly communicates with consumers. Rahman (2003) also found similar findings as the present study in two different markets of Gazipur district. Mia (1996) identified three marketing channels in Mymensingh district, all of which involved *aratders* and *beparies* like intermediaries. Khan (1995) reported on existence of two marketing channels in Netrokona and Mymensingh town and found commission agents and wholesalers like intermediaries in the marketing channel.

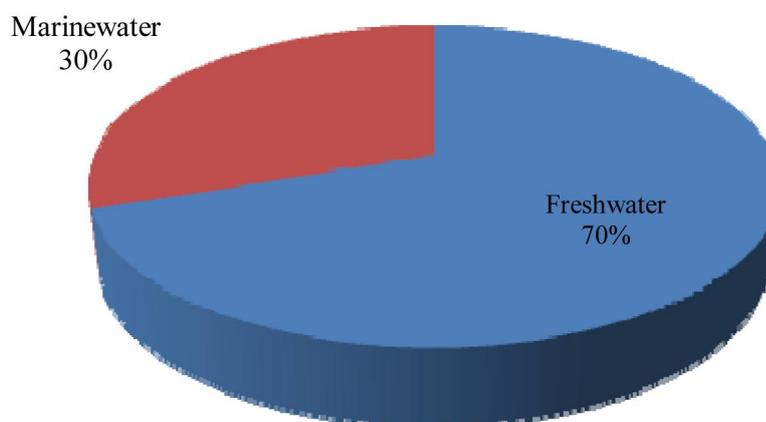
Presence of intermediaries has also been reported even in India by Ahmed (1984). Sometimes suppliers take small amount of credit (dadon) from wholesalers to ensure the supply of freshwater eel from farmers.

According to the survey the weekly supply of freshwater eel from Noakhali region was 7-8 tons to Dhaka for export. Most of the freshwater eel (65%) was found in winter season in Hatya, Noakhali.

In the present study the price of freshwater eel was found to fluctuate with the variation of species, quality, size and weight. Traders also noted that price varies according to daily 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).

In Noakhali district, many constraints for freshwater eel marketing were reported by suppliers, including higher transport cost, poor road and transport facilities, poor supply of ice, exploitation by middlemen, inadequate drainage system, poor water supply, poor sanitary facilities and unhygienic condition. Lack of capital or credit

**Figure 6: Export Percentage of Fresh Water and Marine Water Eel**



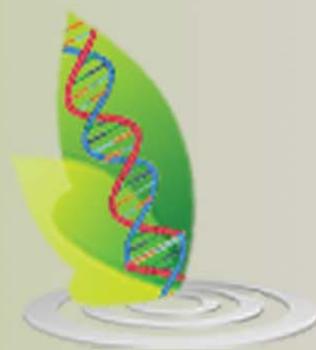
support from the government or non-governmental banks for eel trading was a major problem while there exists sufficient credit facilities for shrimp trading. However, loan facilities for freshwater eel traders from commercial or government banks are not available. In Bangladesh, the social and religious restrictions on the consumption of freshwater eel are also hindering the business.

## CONCLUSION

Freshwater eel marketing is considered as a profitable business by most of the marketing operators. From the survey it was found that the price is strongly affected by various factors including seasonality. Domestic demand needs to increase through increasing social awareness and promoting awareness of the nutritive value of this export oriented species. Considering the total export earnings from freshwater eel the fishery shows future potential. To achieve this, development and support from government and different nongovernmental organizations needs to be greater and perceptions regarding the activity needs to show attention for the culture system of freshwater eel and marketing in Bangladesh.

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**International Journal of Life Sciences Biotechnology and Pharma Research**

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