

## DEMOGRAPHIC FEATURES OF AQUARIUM SHOPKEEPERS AND USERS IN SYLHET DIVISION OF BANGLADESH

MS Uddin<sup>1</sup>, R Akter<sup>2\*</sup>, MS Islam<sup>3</sup>, FK Chadnee<sup>4</sup>

<sup>1,2&4</sup> Department of Aquaculture, <sup>3</sup>Department of Coastal and Marine Fisheries, Sylhet Agricultural University, Sylhet, Bangladesh

(Available online at [www.jsau.com.bd](http://www.jsau.com.bd))

### Abstract

The present study was conducted on demographic features of aquarium shopkeepers and users in Sylhet division for a period of six months from December 2017 to June 2018. In Sylhet division, eight upazilas were selected from four districts for data collection. In the Sylhet division, 11 aquarium shopkeepers, 14 aquarium users and 14 other stakeholders were interviewed through questionnaire. Upazilas were Sylhet sadar and Gulapganj from Sylhet district, Sunamganj sadar and South Sunamganj from Sunamganj district, Moulvibazar sadar and Sreemongal from Moulvibazar district and Habiganj sadar and Madhabpur from Habiganj district. Among four districts, Sylhet district had higher number of aquarium shops where Sunamganj district had no aquarium shop and Habiganj and Moulvibazar district had very few number of aquarium shops. In the present study it was found that 36.36% shopkeepers were in the age group of 20 to 30 years and 50% users were in the age group of 20 to 30 years. Around 27.27% shopkeepers were found having experience in aquarium trade for less than 5 years, 36.36% shopkeepers were having more than 5 to 10 years and 36.36% shopkeepers were having more than 10 years experiences in this business. Most of the users (60%) was kept aquarium for decoration, 27% hobbyist and 13% customers maintain the aquarium for entertainment. Collected data indicated that nearly 26 fish species were available in Sylhet division. Fish in Sylhet district was higher in number than other districts. All species were exotic except one native species. There was no local aquarium fish hatchery in the study area. Feed used in aquarium were imported from foreign countries such as Thailand, China, Malaysia etc. The price of a pair of aquarium fishes in Sylhet ranged within BDT 50 to 1500. The highest retail price was found for discus fish (1500 BDT per pair) followed by red parrot (1000 BDT per pair) and oscar (650 BDT per pair).

**Keywords:** Aquarium, ornamental fish, feed, demographic features of aquarium shopkeepers and users, status, Sylhet division.

### Introduction

In the nature there are various beautiful things. Ornamental fishes/aquarium fishes are one of the important natural symbols of beauty. They are often called as “Living Jewell” due to their color, shape, behavior and origin. They are peaceful generally tiny, available in attractive colors and capable of living in confined spaces. From the ancient time aquarium fish keeping has been a hobby. With the time popularity of ornamental fish keeping increased. Globally ornamental fish production is a multibillion dollar industry (Rani *et al.*, 2014). The value of international exports trade of ornamental fish has increased at an average growth rate of approximately 14% per year since 1985 (Rani *et al.*, 2014).

Overall aquarium fish trade is increased in steady fashion due to the growing interest in aquarium fishes globally. The whole industry, when non-exported product, wages, retail sales including accessories and fish feed are considered, has been estimated to be worth around US\$15 billion (Rani *et al.*, 2014). More than 4000 freshwater and 1400 marine species of over 1 billion ornamental fish are traded each year internationally (Whittington and Chong, 2007, Alam *et al.*, 2016). But more than 60% of the total world trade of ornamental

---

\*Corresponding author: R Akter, Department of Aquaculture, Sylhet Agricultural University, Sylhet, Bangladesh, Email: [rimasau4040@gmail.com](mailto:rimasau4040@gmail.com)

fishes goes to the economies of Asia (Ghosh *et al.*, 2003). Sylhet (north-eastern division of the country) division is endowed with various natural water sources. It is an identical region of freshwater fishes including aquarium fishes such as *Botia Dario*, *Colisa lalia*, *P. chola*, *P. conchoni*, *P. gelius*, *P. guganio*, *P. puntio*, *P. ticto* etc. In this region ornamental fish keeping also get popularity day by day. Research on aquarium fishes has done in other parts of the country. But no research is done on demographic features of aquarium shopkeepers and users including the status of aquarium fisheries in Sylhet division. Considering these point, an attempt had been made to clarify demographic features of aquarium shopkeepers and users in Sylhet division of Bangladesh.

## Materials and Method

**Study area and duration:** The study was carried out in Sylhet division (Sylhet, Sunamganj, Habiganj and Moulvibazar) for a period of six months from 5 December 2017 to 4 June 2018.

**Sources of data and collection of information:** Data were collected from eight upazilas under four districts of Sylhet division to accumulate information of available aquarium shops. Existing shops were weekly surveyed to collect necessary information. Before starting the survey a questionnaire was prepared and all primary data was documented on it. In order to collect the data, field survey was conducted. In total 11 aquarium shopkeepers, 14 aquarium users, 14 other different stakeholders were interviewed with questionnaire. The response of each respondent was compiled and tabulated to indicate frequency and percent distribution for different categories of the questionnaires.

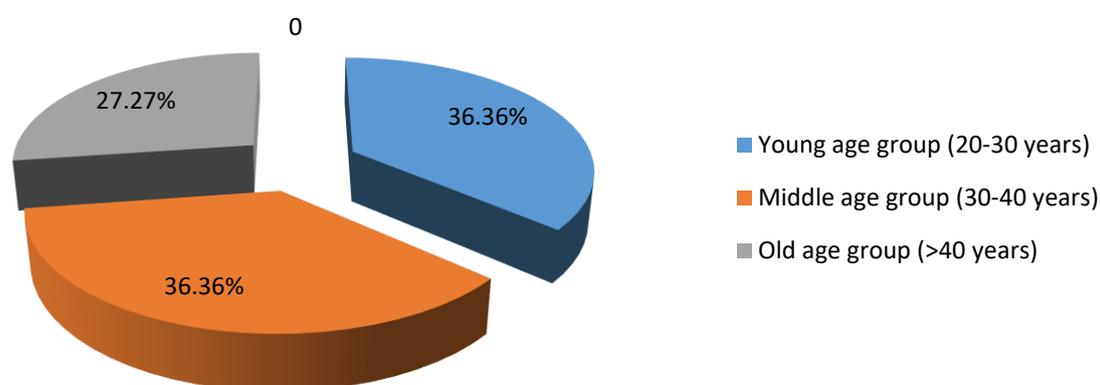
## Results and Discussion

### Demographic features and profile of aquarium shopkeepers

The results pertaining to the demographic features and profile of aquarium shop owners are presented below:

#### Aquarium shopkeeper age

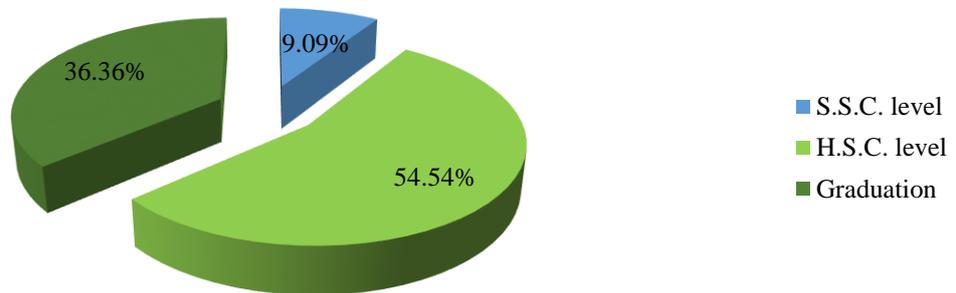
In the study most of the shopkeepers (36.36%) were in the age group of 20 to 30 years, 36.36% shop owners were in the age group of 30 to 40 years and remaining 27.27% were more than 40 years old. All the shopkeepers interviewed were male (Fig. 1) while Sharma *et al.*, (2015) found (58.3%) shop owners were in the age group 30 to 40 years in Kota district of Rajasthan, India. Faruk *et al.* (2012) found all the interviewed shopkeepers were male with an average age of 37 years in Dhaka city.



**Fig. 1: Age groups of aquarium shopkeepers**

**Educational status of the shopkeepers**

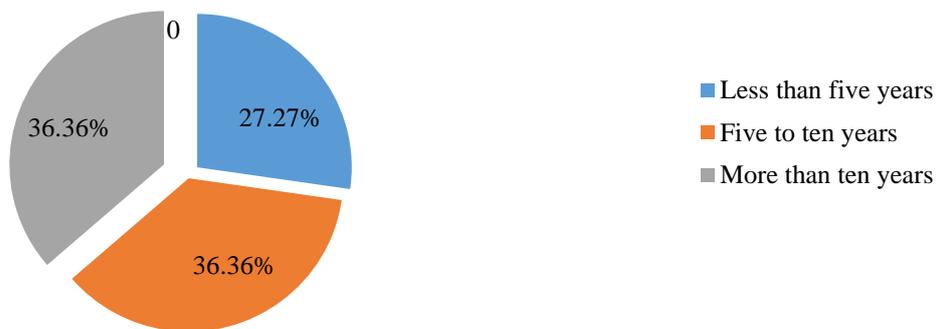
The educational qualification of 9.09% shopkeepers was S.S.C. level; however, 54.54% shop keepers were having education H.S.C. level and 36.36% were graduation level (Fig. 2).



**Fig. 2: Educational status of the shopkeepers**

**Experience in aquarium fish business**

It was observed that 27.27% shop owners were having experience in aquarium trade for less than five years; 36.36% shop owners were having more than five to ten years; however, 36.36% shop owners were had more than ten years' experience in this business (Fig. 3) while Faruk *et al.*, (2012) stated that experience in aquarium fish business ranged from 6 months to 19 years with an average of 9 years.



**Table 3: Retail prices of ornamental fishes mentioned by users in Sunamganj district**

**Mode of business operation**

It was observed that 80% shop owners were self-employed and running aquarium business at their own cost. Remaining 20% shop owners got financial support from non-institutional loan source as relatives and friends (Fig. 4).



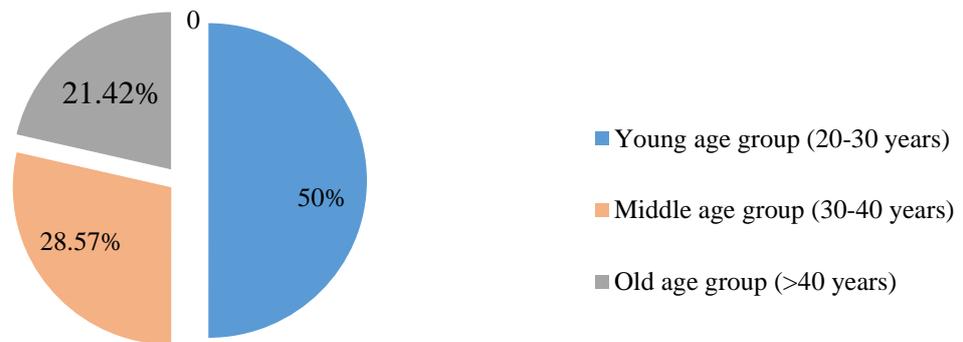
**Fig. 4: Mode of business operation**

**Demographic features and profile of aquarium users**

The results pertaining to the demographic features and profile of aquarium users are presented below:

**Age of aquarium users**

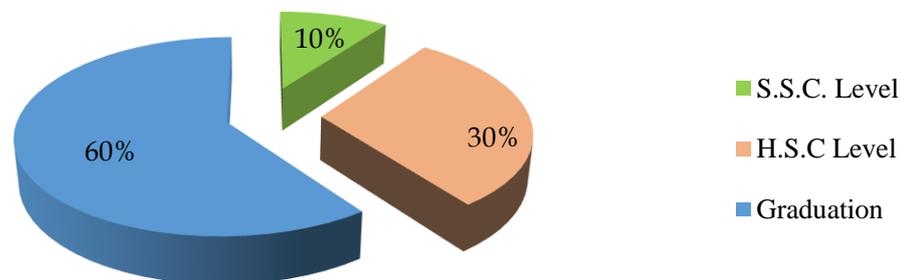
Data showed that most of the users (50%) were in the age group of 20 to 30 years, 28.57% users were in the age group of 30 to 40 years and remaining 21.42 % were more than 40 years old. All the interviewed users were male (Fig. 5). Sharma et al. (2015) found that the age of aquarium users range from 20-30 years was maximum (40%) followed by the age group 30- 40 years (30.36%) whereas 24% customers were more than 40 years.



**Fig. 5: Age groups of aquarium users**

**Educational qualification of aquarium users**

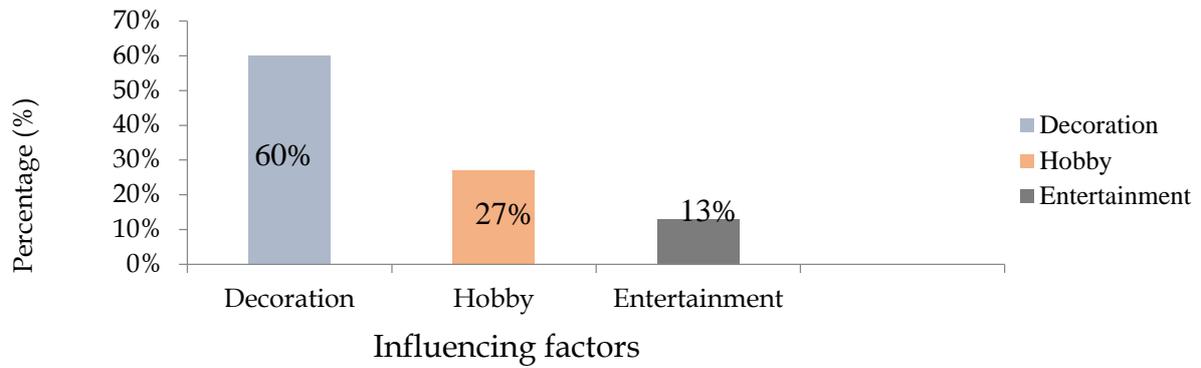
The results showed that the educational qualification of 10% users was S.S.C. level. However, 30% of them had H.S.C. and 60% were graduation level (Fig. 6). Selvarasu and Sankaran (2010) reported that 44 % of the respondents had graduation.



**Fig. 6: Educational qualification of aquarium users**

**Reasons for choosing ornamental fish keeping**

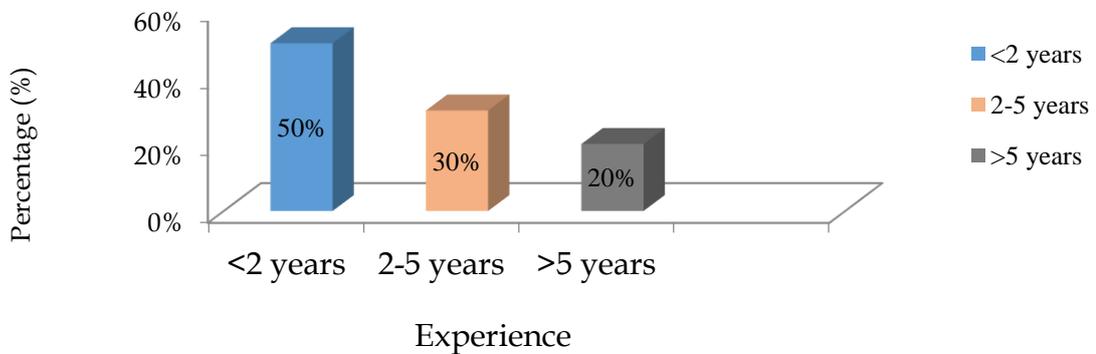
From the study it was found that 60% users were kept aquarium for decoration, 27% hobbyist kept aquarium in their place of business or at home for hobby and 13% customers maintained the aquarium for entertainment (Fig. 7).



**Fig. 7: Reasons for choosing ornamental fish keeping**

**Experience in aquarium keeping**

Most of the customers (50%) had recently established aquarium, 30% customers were having their aquarium for 2 to 5 years, 20% were having their aquarium for more than 5 years (Fig. 8).

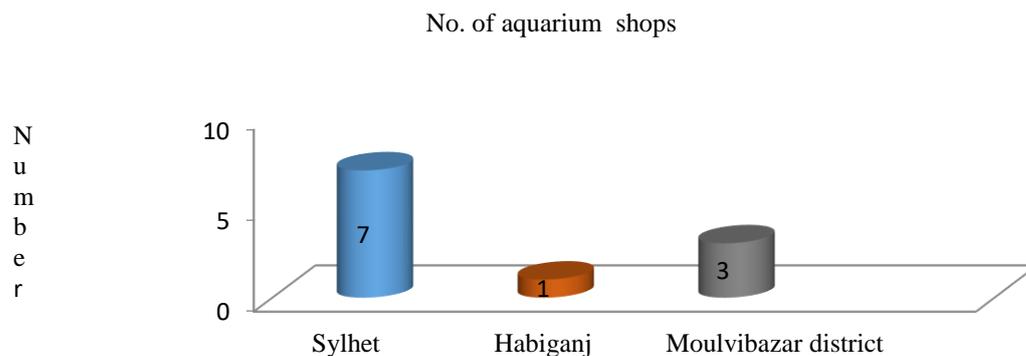


**Fig. 8: Experience in aquarium keeping**

**Status of ornamental fishes in Sylhet division**

**Status of aquarium shops**

Eleven aquarium shops were operated in the Sylhet division during the study period. Only 7 shops were found in the Sylhet district. There were 3 aquarium shops found in Moulvibazar district and 1 aquarium shops found in Habiganj disterict consequently in Sylhet division (Fig. 9). Galib *et al.* (2013) had documented three shops in the Jeshore town. This information also supported our study by showing that overall situation of aquarium trade is more or less similar in southern Bangladesh.



**Fig. 9: Available aquarium shops in the Sylhet division**

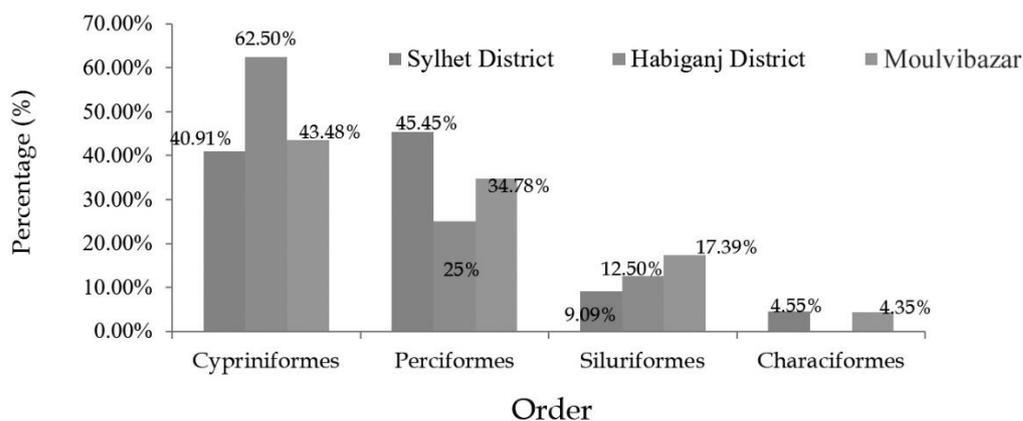
**Available ornamental fishes**

Twenty six (26) species of ornamental fish were found in Sylhet division of which twenty two species of ornamental fish in Sylhet district, 8 species of ornamental fish in Habiganj district and 23 species of ornamental fish were recorded in Moulvibazar district during data collection. All of these species of ornamental fish belong to following fish orders- Cypriniformes, Perciformes, Siluriformes and Characiformes. The percentage of these four orders was not similar in three districts based on their total fish number which is presented in Table 1.

**Table 1: Order wise percentage of ornamental fish species**

Order of fish species	Sylhet district (Total fish no. = 22)	Habiganj district (Total fish no. = 8)	Moulvibazar district (Total fish no. = 23)
Cypriniformes	40.91%	62.50%	43.48%
Perciformes	45.45%	25%	34.78%
Siluriformes	9.09%	12.50%	17.39%
Characiformes	4.55%	...	4.35%

The order wise distribution of ornamental fish species in different district based on their total fish number is also shown in form of bar diagram (Fig. 10).



**Fig. 10: Diversity of order of different ornamental fish species in different district**

The study showed that, among the aquarium fishes diversity of Cypriniformes in three districts was overall good, diversity of Perciformes was medium but diversity of Siluriformes and Characiformes was comparatively lower. Absence of Characiformes also observed in Habiganj district.

### Price of ornamental fish species

The price of a pair of ornamental fish in Sylhet division market was ranged within BDT 50-1500. The highest retail price was found for discus fish (1500 BDT/ pair) followed by red parrot (1000 BDT/ pair) and oscar (650 BDT/ pair). The most demandable species of ornamental fish were gold fish, comet fish, angel fish, guppy, and black molly. Besides these, many aquarium keeper order fish to the traders according customers demand and traders supplied expected fish to aquarium keepers after collection through importing. Demand of fish found to depend on price, size survival in aquarium, availability and colour. Available ornamental fishes and their prices in Sylhet division are shown in Table 2. In Sunamganj district some users were found who collected ornamental fishes from retailer of Sylhet market or retailer of Dhaka market and price of these fish are given in Table 3.

**Table 2: Available ornamental fishes and their prices in Sylhet division**

Name of the ornamental fish	Scientific name	Sylhet district		Habiganj district		Moulavibazar district	
		Wholesale price (BDT/pair)	Retail price (BDT/pair)	Wholesale price (BDT/pair)	Retail price (BDT/pair)	Wholesale price (BDT/pair)	Retail price (BDT/pair)
1. Gold fish	<i>Carassius auratus</i>	60	100	60	100	60	90
2. Tiger barb	<i>Barbus tetrazona</i>	44	70	44	80	44	60
3. Koi carp	<i>Cyprinus carpio</i>	50	80	50	80	50	75
4. Tiger shark	<i>Pangasius hypophthalmus</i>	50	100	50	120	50	120
5. Oscar	<i>Astronotus ocellatus</i>	280	400	280	450	280	420
6. Angel fish	<i>Pterophllum scalare</i>	40	60	40	70	40	70
7. Comet	<i>Carassius auratus</i>	40	80	40	90	40	90
8. Black moor	<i>Carassius auratus</i>	...	...	80	150	80	150
9. Sucker fish	<i>Plecostomus punctatus</i>	40	80	...	...	40	70
10. Guppy	<i>Poecilia reticulata</i>	32	50	...	...	32	50
11. Dollar	<i>Metynnis argenteus</i>	140	200	...	...	150	200
12. Golden gurami	<i>Trichogaster trichopters</i>	50	100	...	...	50	100
13. Zebra	<i>Brachydanio rerio</i>	50	80	...	...	50	90
14. Rainbow shark	<i>Epalzeorhynchus frenatus</i>	60	100	...	...	60	90
15. Discuss	<i>Symphsodon discus</i>	1300	1500	...	...	1300	1400
16. Blue gurami	<i>Trichogaster trichopters</i>	60	100	...	...	60	120
17. Parrot	<i>Scarus rivulatus</i>	450	600	...	...	450	700
18. Butterfly	<i>Pantodon buchholzi</i>	250	350	...	...	...	...
19. Yellow barb	<i>Labidochromis caeruleus</i>	100	200	...	...	...	...
20. Glass fish	<i>Kryptopterus bicirrhis</i>	80	120	...	...	80	120
21. Molly	<i>Poecilia sphenops</i>	40	60	...	...	40	70
22. Silver shark	<i>Balantiocheilos melanopterus</i>	80	120	...	...	80	120
23. Gurami	<i>Trichogaster trichopters</i>	50	80	...	...	...	...
24. Albinow tiger shark	<i>Pangasius hypophthalmus</i>	...	...	...	...	70	100
25. Rosi barb	<i>Puntius conchoniuis</i>	...	...	...	...	40	80
26. Albino catfish	<i>Clarias batrachus</i>	...	...	...	...	70	100

**Table 3. Ornamental fishes and retail price**

<b>Ornamental fish name</b>	<b>Retail price (BDT/Pair)</b>
1. Angel	70
2. Gold Fish	100
3. Comet	100
4. Tiger barb	80
5. Koi carp	80
6. Tiger shark	100
7. Silver Dollar	200
8. Blue gurami	50
9. Guppy	100

### Management

Management is also important step to success any business. In this study, some problems are faced by shop owner during management- no warranty card of aquarium glass like lack of good quality aquarium glass, lack of available water, lack of preventive measures, lack of knowledge in relation to diseases, non-availability of drugs, etc

### *Business status in Sylhet division*

Aquarium fish business status was comparatively good in Sylhet and Moulvibazar. But business status was poor in Habiganj district. In Sunamganj aquarium shops did not be found.

The ornamental fish sector is a widespread and global component of international trade, fisheries, aquaculture and development. Nowadays, this aquarium business is established as a profitable and luxurious business in many countries of the world. This growing business venture needs more care and support from different corners for sustainable. Aquarium fish business is also an emerging issue in Sylhet division. There is a huge potential to augment this business if government takes necessary steps such as providing training, loan, incentives, etc

### References

- Alam MR, Alam J, Pattadar SN, Karim R and Mahmud S. 2016. A trend of ornamental fish business in Barisal division, Bangladesh. *International Journal of Fisheries and Aquatic Studies*. 4(3):263-6.
- Faruk MAR, Hasan MM, Anka IZ and Parvin MK. 2012. Trade and health issues of ornamental fishes in Bangladesh. *Bangladesh Journal of Progressive Science and Technology*. 10(2):163-168.
- Galib SM, Imam M, Rahman MA, Mohsin ABM, Fahad MFH and Chaki N. 2013. A study on aquarium fish business in Jessore district, Bangladesh. *Trends in Fisheries Research*. 2(3):11-14.
- Ghosh A, Mahapatra BK and Datta NC. 2003. Ornamental Fish Farming Successful Small Scale Aqua Business in India. *Aquaculture Asia*. 8(3):1416.
- Rani P, Immanuel S and Kumar NR. 2014. Ornamental fish exports from India: Performance, competitiveness and determinants. *International Journal of Fisheries and Aquatic Studies*. 1(4):85-92.
- Selvarasu A and Sankaran A. 2010. Marketing Strategies vis-avis consumer preference for aquarium business service. *International Journal of Latest Trends in Finance and Economic Sciences*. 1:23-29
- Sharma S, Burark S, Shivani A, Waged MS and Gocher S. 2015. Present status and marketing strategies of aquarium fish trade in Kota district of Rajasthan: A case study. *Indian journal of agricultural marketing*. 101-113.
- Whittington RJJ and Chong R. 2007. Global trade in ornamental fish from an Australian perspective: The case for revised import risk analysis and management strategies. *Preventive Veterinary Medicine*. 81(1-3):92-116.