



## SOCIO-ECONOMIC CONDITIONS OF THE FISH FARMERS IN JESSORE, BANGLADESH

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### Abstract

The study was conducted the fish farmers in some selected area at sadar upazila in Jessore under the district of Jessore from September to December 2013. A total of 100 fishermen were selected by stratified random sampling method and interviewed. The average members of single family were 5-6 people per household. Single families were much more (62 %) than joint families. Most of the fish farmers were Muslims 92% and few of them were Hindus 8% Most of them had the secondary educational background and some of them with different levels of higher education. It was found that the number of school going children was 2-3 per house. Full katcha (17 %) houses were few, while the semi-pucca (40%) and pucca (43%) houses were more abundant. Regarding health and sanitation, 31% fishermen reported to suffer from gastric and 17% suffered from fever. Most of the interviewees were found to take credit facilities from different sources for the subsistence of their family and their venture. The 98% were found to have their tube-wells, others using Governmental tube-well, or those belonging to schools or neighbors However, they need more institutional, organizational, and technical and credit support for their better socio-economic and sustainable livelihood.

**Key words:** Fish farmers, livelihood status, constraints, outcomes.

### Introduction

Fish and fishery resources play a vital role in improving the socio-economic condition, combating malnutrition, earning foreign currency and creating employment opportunities in Bangladesh. Bangladesh is a developing country. Fisheries sector plays an important role as a source of income, employment, nutrition and foreign exchange earnings in Bangladesh. Fish is renewable natural resource and plays a great role for the improvement of socio-economic condition of poor fishers. Bangladesh is blessed with huge water bodies in the form of pond, natural depressions (haors and beels), lakes, canals, rivers and estuaries covering an area of 45,75,706 hectares (ha.) (DoF, 2008). The inland water bodies are rich in freshwater fish species comprising 260 indigenous, 12 exotic and 24 fresh water prawn species (DoF, 2008). In recent years, this sector performs the highest GDP growth rate in comparison to other agricultural sectors (crop, livestock and forestry). The growth rate of this sector over the last 10 years is almost steady and encouraging; varying from 4.76 to 7.32 percent with an average 5.61 percent (DoF, 2013). Fisheries sector provides about 60% of the animal protein intake and more than 11% of the total population of the country is directly or indirectly involved in this sector for their livelihoods (DoF, 2013). The overall growth performance from inland aquaculture shows a moderate increased trend due to dissemination of improved technology packages and supportive/need-based extension services at farmer's level. A slight growth in the production from both inland capture and marine fisheries was also noticed during the last two and half decades with some exceptions. Though the closed water area is only 15.55% of the total inland water-bodies, but 52.92% of the total yield comes from inland aquaculture. Pond aquaculture is increasingly growing up mainly in Jessore and Mymensingh districts in Bangladesh. It is highly remarkable to mention that Jessore and Mymensingh meet above 80% of the seed demands of the total demands of the present aquaculture necessity. (DoF, 2013). Above this reason, I liked to work on the socioeconomic condition of the study area. The overall objective of the current study area was to know the economic status of the fish farmers.

### Materials and Methods

The study was carried out in some selected area of Jessore sadar upazila of Jessore district. The survey was undertaken over four months (September to December 2013). The survey was conducted on 100 fish farmers of 10 villages under 5 unions in Jessore sadar upazila of Jessore district. About 100 fishers were

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randomly selected from out of the total 10 villages. A range of Participatory Rural Appraisal (PRA) and personal interview were applied with different degree of effectiveness. Data was collected by personal interviews through questionnaire form. The fish farmers were selected through random sampling and the total number were hundred. The collected data were also compared with other information received from other owners. Data related to socio-economic condition such as occupation types, educational status, age group and sex ratio, family size and religious status of the fish farmers were collected. Data involving cost-benefit analysis were also collected.

## Results

### Age group

To know the age of farmers was important in estimating potential productive human resources. Planning of education, health, and employment generations required sufficient data on relevant age groups. The age distribution of farmers had an important on labor, and also on their perceptions of the future. It was found that there was no fish farmer below 20 years of age. Results showed that the highest numbers of fish farmers were between 31 and 40 years indicating middle age people (Table 1).

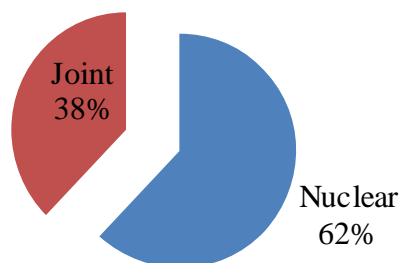
**Table 1.** Different age groups of farmers

Age group	Frequency	Percentage
21-30	20	20
31-40	44	44
41-50	22	22
51-60	12	12
61-70	2	2
Above 71	0	0

### Religious status

Religion can play a very important role in the socio-cultural environmental life of people and can act as a notable constraint modifies in social changes. In the study area 92% of the people were Muslims, and the remainders 8% were Hindu, no Buddhist or Christians (Table 2).

### Family condition

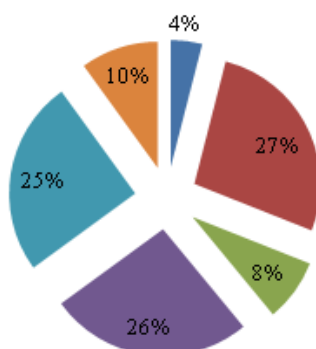


**Fig.1** Family condition of the fish farmers

In the study area, it was found that 62% of the people lived with nuclear families and only 38% lived with joint family. In the study area the nuclear family was very popular because of getting greater freedom of movement and economic opportunities, dress better, better education and woman authority (Fig.1).

### Educational status

■ Graduate ■ SSC ■ HSC ■ Passed class 6-10 ■ Passed class 1-5 ■ Illiterate

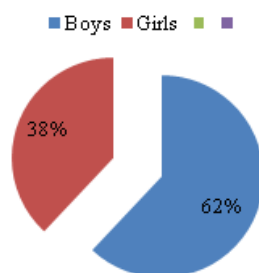


**Fig. 2** Educational status of the fish farmers

There was strong relationship between society and education, Human resource development is largely a function of literacy and educational attainment. Amongst farmers, literacy and education attainments help develop conceptual skill and also facilitate the acquisition of technical skill, which can have direct bearing income generation, expenditure and saving activities. The environment of education in the study area is good. In the study area there was 4% graduate, 8% H.S.C, 27% S.S.C. 26% had passed class 6-10, 25% had passed class 1-5(Fig.2).

#### **School going and dropout children**

It was found that the number of school going children was 2.41 per house. It was also observed that about 62% were school dropout boy and 38 % were girl (Fig. 3)



**Fig. 3** Percentage of school dropout boys and girls

#### **Health, nutrition and Sanitation condition**

##### **Health**

The study showed that 80% of the population in the study area was dependent on village doctors (unqualified practitioners, homeopathy, kabiraj etc), who did not have any understanding and knowledge of medical science, while 12% and 8% go health service from upazila health complex and MBBS (Bachelor of Medicine and Bachelor of Surgery) (Table 2).

##### **Nutrition**

Most of the fish farmers were not very much aware about nutrition health and sanitary conditions. From the survey it was observed that intake of fish and vegetables were the highest whereas intake of meat, milk and eggs were the lowest in a month.

##### **Sanitation**

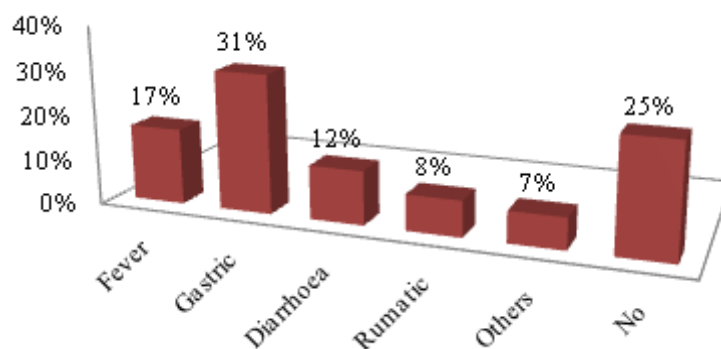
It was observed that the farmer's sanitary conditions were good. Three types of toilet are used. Katcha toilet-made of bamboo with leaf shelter and inadequate drainage disposal, 2) Safety toilet- made bamboo walled, ring slave with good drainage disposal and 3) sanitary latrine. Most of the people about 55% are used safety toilet, 15% are used Katcha toilet and rest of the 30% used sanitary latrine (Table 2).

**Table 2** Wealth Ranking, Housing condition, Sanitation, Drinking water facilities and Health

Wealth Ranking (%)			Housing condition (%)		
Middle class	Upper M. Class	Poor	Pucca	Semi pucca	Katcha
72	14	14	30	34	36
Sanitation (%)			Drinking water facilities (%)		
Safety toilet	Sanitary latrine	Katcha toilet	Tube-wells	Ponds	
55	30	15	98	2	
Health (%)			Religious Status (%)		
Village doctor	Knowledge gap service	Health	Muslims	Hindu	
80	12	8	92	8	

#### **Diseases and Treatments**

About 79 % of the farmers were suffered with different types a diseases including rumatic fever, dysentery, jaundice, malnutrition, gastric, diarrhea, fever etc for unhygienic environment where they live. It was also found that 21 % farmers were not suffered by any types of diseases last year (Fig. 4) which was near about one fourth of the total farmers. Maximum fish farmer's family took quack treatment against disease, which showed the unawareness of getting treatment of diseases.



**Fig. 4** Percentages of types of disease occurred

### **Wealth Ranking**

In the study area there was various type of fish farmers according to their wealth such as 1) Upper middle class farmers, 2) Middle class farmers and 3) poor farmer by the used of indicators, Education, Money, Power, Intelligence, Job, Land, Business, House condition, Latrine condition (Table 2).

### **Housing condition**

In the study area, houses of the community were of three main types: 1) Kutcha- house were made of bamboo and talli or tin with mud flooring, 2) Semi pucca- made of wood or/and tin, and 3) Pucca- made of brick. The study reveals that 36% of housing structures were Katcha, 30% were semi pucca and 34% were pucca (Table 2).

### **Drinking water facilities**

The study showed that most of the villagers in the study area were used tube-wells for drinking water. The 98% were found to have their tube-wells, others using Governmental tube-well, or those belonging to schools or neighbors (Table 2).

### **Other assets (livestock and poultry)**

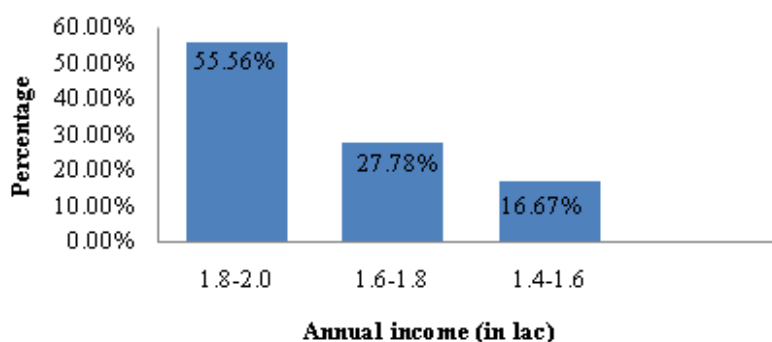
The study showed an encouraging picture regarding ownership and observed rearing livestock and poultry by the fish farmer's household. The study revealed that there were 65% of the fish farmers who had possessed cow/goat/hen/duck (Table 3).

**Table 3** List of other assets (livestock and poultry)

Name of domestic animal	Frequency	Percentage
Hen/ Duck	4	4
Cow	8	8
Goat	18	18
Both Cow/Goat/Hen/Duck	65	65
No Asset	5	5
Total	100	100

### **Economic Structure**

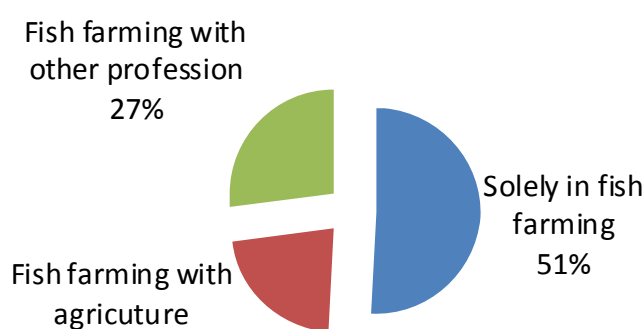
It is difficult to obtain reliable information on yearly income through survey. However the information on income sources was collected from the respondents very carefully. On the basis of information sources of income of the gher owners are reputed from agriculture, fisheries, business, service and others. Out of 100 farmers of interviewed, (55.56%) farmers earned TK. 1,80,000- 2,00,000, (27.78%) farmers earned TK. 1,60,000- 1,80,000 and the rest (16.67%) farmers earned above TK. 1,50,000 per year per acer (Fig.5). It revealed that the families under the study spent more money when their income was more and spent less when their income was also less.



**Fig. 5** Economic Structure of the farmers

### Occupation

In the surveyed area, 51% farmers was involved solely in fish farming, 22% in fish farming with agriculture, 27% in fish farming with other profession (Fig. 6).



**Fig. 6** Occupation of fish farmers

### Involvement in fish culture

About 70 % fish farmers were culturing fish for 1 to 6 years. They were new comers in this profession. Most of them were inspired by the other farmers who were found that fish culture was profitable and also raw materials were available. Thus these types of farmers were found higher in survey report. About 4% or fish farmers have been culturing fish 16 to 20 years who were the most experienced farmers (Table 4). Though the percentages of experienced fish farmers were low but they contributed a lot to exploit the fish culture through the younger.

**Table 4.** List of involvement in culture

Years	Frequency	Percentage
1-5	70	70
6-10	20	20
11-15	6	06
16-20	4	04
Total	100	100

### Other profitable culture

Survey was conducted to find out the other profitable culture instead of fish farming by the fish farmers. The survey result showed that various types of culture which were seemed to be profitable to the fish farmer were Paddy culture, Rearing of hen and duck, Farming of cow and goat and Vegetable culture.

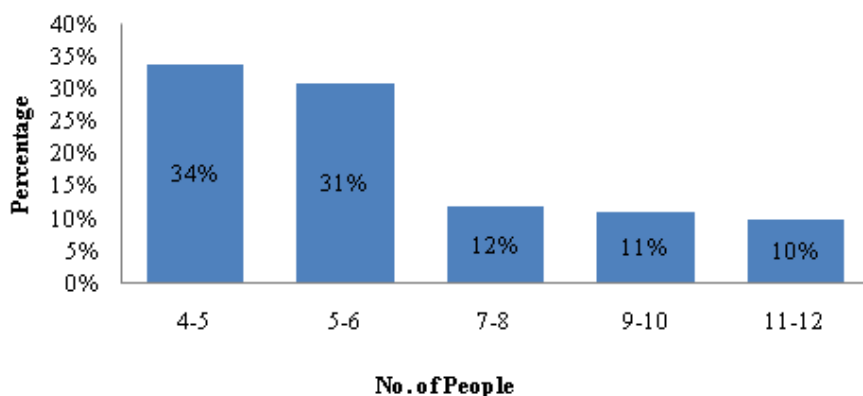
### Fish fry collection

Above 100 % farmers depend on the hatchery fry. They bought those fry at reasonable price whatever the source was. They bought their fry mainly in the hatchery those are situated at chachra in Jessore.

### People involved in fish harvesting

In about 34% of the ghers, 4 to 5 people were involved in harvesting of fish. In 31 % of the ghers people 5 to 6 were working. About 13 % of the ghers people 7 to 8 were working. In 10 % of the ghers people 9

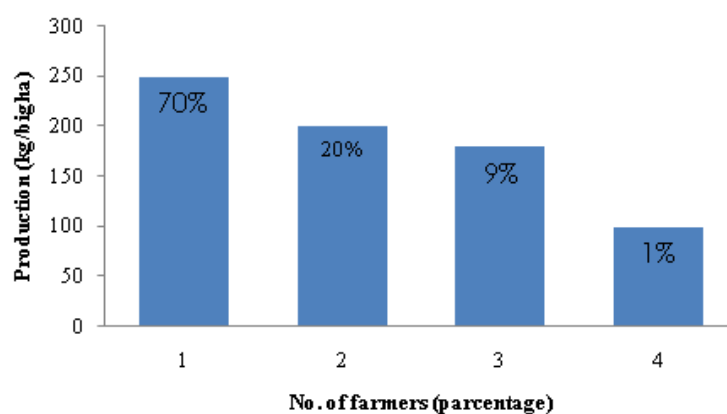
to 10 and 11 to 12 were working. The numbers of peoples were working in the gher on the basis of areas of the gher or the number of labors engaged by the gher owner (Fig. 7).



**Fig. 7** Percentage of farmers involved in harvesting

### Production

Maximum 70% farmers got above 250 kg fish /bigha and 20% farmers got 200 kg fish/bigha. Besides, 9 % farmers got 180 kg fish/ bigha per year and only 1 % was found 100 kg fish/bigha (Fig. 8).



**Fig. 8** Production of fish kg/bigha

### Sources of money for fish culture

About 60 % of the fish farmers did not take any loan from any other institution. The total information about the loans is given in Table- 5. Though some farmers were interested to take loan from banks or NGOs but due to some official constrains they could not act it in easy way.

**Table 5.** List of kinds of loan taken from Banks and NGOs

Loan taken from	Amount (TK)	Interest/Year
BRAC	4000	12%
Krishi Bank	1500	11%
Sonali Bank	2800	12%
Ad-Din	5000	15%
Prosika	4000	15%
Grameen Bank	5000	20%
Asha	4500	6%

### Discussion

The present study shows that there was no fish farmer below 20 years of age. The highest numbers of fish farmers 40% were between 31 and 40 years age. 66% farmers in Tangail and 70% in coastal region were under 40 years of age reported by Ahmed (1996) and Ahmed (1999), respectively. Kostori (2012) reported that majority 36% fishermen of the ChalanBeel were belonging to age group of 20 to 30 years.

Most of the people of selected area are Muslims 92%, beside this only 8% people are Hindus. But Raju (2002) found 14.33% Hindus and 85.67% Muslims in SailkupaUpazila. This result was agreed by

Ahmed, (1996). Different picture was found by the study of Chantarasri (1994) and Rabbani and Sarkar (1997) in Sundarbans Reserve Forest and stated that most were Hindus.

The family functions as a unit for income generation, composition, reproduction and social interaction, however, extensive commingling and intermixing occurs among separate nuclear households (Haider, 1997). In the study area, it was found that 62% of the people lived with nuclear families and only 38% lived with joint family. The average members of single family were 5-6 and joint family was 7-8 per household. In Mymensingh district, most of the fish farmers (45%) were belonging to the family member of 4 to 5 (Ali *et al.*, 2009). The present study shows 68% of the fish farmers were married while the unmarried fish farmers represented 32%. Ahmed (1996) and Mannu (1999) reported that in Tangail and Kuakata marital status of the fish farmers were 94% and 92%, respectively.

In the study area there were 4% graduate, 8% H.S.C, 27% S.S.C. 26% had passed class 6-10, 25% had passed class 1-5. DoF (1993) in Chandabeel and Ahmed (1996) in Tangail found literacy rates being 45% and 69%, respectively. Similar results also mentioned by Kostori (2012) while working with the fishermen of the Chalan Beel. Halder *et al.* (2011) also reported similar findings, 52.78% fish retailers had no formal education.

The present study shows that the number of school going children was 2-3 per house. Ahmed (1996) found number of school attending children per house at 1-2. The study showed that number of school going boys were higher than that of girls which was supported by the study of Al-muhit (2000).

A family may be said to be well served in health when all of members have sustainable access to the medical care needed to be free of debilitating, preventable health problems, and to have health problems addressed by component health care professional (Albrecht *et al.*, 1998). The present study showed that 80% of the population in the study area was dependent on village doctors who did not have any understanding and knowledge of medical science, while 12% and 8% go health service from upazila health complex and MBBS. Shahriar *et al.* (2010) found in the Morgangi Beel area health facilities of the fishers were better than the Baluhar Baor area where 64% of the fishermen's HHs were dependent on village doctors, 24% of the fishermen got health service from upazila health complex and remaining 12% got health service from MBBS doctors. This difference could be due to low income the lack of knowledge of the fishermen concerned.

A sanitation facility is also related to health status. It was observed that 55% and 30% of the people used safety toilet and sanitary latrine respectively. And 15% used unhygienic katcha latrine. Shahriar *et al.* (2010) was found that 68% of toilets were *kancha* while 18% and 6% were semi-*pucca* and *pucca* and 8% of the fishers had no sanitary facilities in Morgangi Beel area. Ali *et al.* (2008) found that 88% fish farmers were used their own tube-well in Rajshahi district. But (Ahmed, 1999) mentioned that most farmers used pond water due to lack of tube-well in coastal area.

From the present survey, it was found that 36% of housing structures were Katcha, 30% were semi pucca and 34% were pucca. On the other hand Ali *et al.* (2008) found that 54% fish farmer had tinshed, 26% had half building, 14% had building and only 6% had katcha house.

The study showed that most of the villagers in the study area were used tube-wells for drinking water. The 98% were found to have their tube-wells, others using Governmental tube-well, or those belonging to schools or neighbors. Similar result reported by Ali *et al.* (2008) where 88% fish farmers were used their own tube-well in Rajshahi district. But (Ahmed, 1999) mentioned that most farmers used pond water due to lack of tube-well in coastal area.

The present survey showed that there were 65% of the fish farmers who had possessed cow/goat/hen/duck. Different picture was found by the study of Chantarasri (1994) in Sundarbans Reserve Forest reported at 50% cattle owned prawn farmers. Another study by Mahbubullah (1996) showed 82.3% prawn farmers had no animal and poultry.

In the surveyed area, 51% farmers was involved solely in fish farming, 22% in fish farming with agriculture, 27% in fish farming with other profession. Kostori (2012) mentioned that tendency of involving into a different occupation is high during off-fishing season. According to Halder *et al.* (2011) no secondary occupation was found in case of fish retailers. While working with pangus farmers, Ali and Haque (2010) found that 13.30% farmers had no secondary occupation.

## Conclusion

Jessore sadar upuzila has the vast water area which is used as aquaculture, agriculture, as well as housing. But before 1994 when people based on the cultivation of agricultural product and that time their livelihood pattern was not so good, another is after 1994 when people substitute their income earning activities in fish farming, then their livelihood pattern is increasing day by day. This area is very potential as aquaculture farming and they practice it. At present their socio-economic conditions is good and it



increasing day by day. As a socio-economic point of view, freshwater white fish farming in gher systems is more profitable than agriculture. However most of the farmers have been facing a number of constraints for its development due to lack of money and higher cost for gher construction as well as fish production. Thus adequate bank credits without interest or with very small interest are to be ensured to the fish farmers. In addition farmers need training and extension services for gher development with the help of Department of Fisheries (DoF) and non-government organizations (NGOs). So if the gher were properly managed the output and production would increase and improve the earnings as well as socio-economic condition of the rural people

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