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Research Paper

## SOCIOECONOMIC STATUS OF POND FISH FARMERS OF CHARBATA, NOAKHALI, BANGLADESH

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Freshwater fish farming has become a promising and gainful methodology to attain self-sufficiency in food sector and also to create diverse livelihood opportunities of rural people in Bangladesh. Information on socioeconomic framework of the fish farmers forms a good base for successful implementation of developmental program of the economically backward sector. The present study was conducted to assess the socioeconomic status of fish farmers of the Charbata union from May to August 2010. Data were collected through the use of well-structured questionnaire from the selected area. Most of the fish farmers were belonged to the age groups of 36 to 50 years (46%), represented by 82% Muslim. About 18% had no education while 16%, 42%, 14% and 10% had primary, secondary, higher secondary and bachelor level of education respectively. About 6% and 36% of fish farmers were involved in fish farming as their primary and secondary occupation, respectively. The average annual income of the highest percentage (34%) of the fish farmers were BDT 75,000 to 1,00,000. About 74% the of fish farmers received health service from village doctors and remaining 22% and 4% got health service from upazila health complex and MBBS (Bachelor of Medicine, Bachelor of Surgery) doctors respectively. The provision of training facilities was insufficient as only 14% of the fish farmers received formal training on fish farming. About 94% of the fish farmers reported, their socioeconomic conditions were improved through fish farming. Poor knowledge on fish farming, high price of fish feed, poor marketing facilities and lack of money for fish farming was identified as the major constraints.

**Keywords:** Fish farmer, Livelihood status, Fish farming, Education, Annual income, Bangladesh

### INTRODUCTION

Freshwater fish farming plays an important role in the livelihoods of rural people in Bangladesh

(Mazid, 2002). It creates diverse livelihood opportunities for a number of people, many of whom living below the poverty level, in the form

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farmers, operators, employees, traders, intermediaries, day laborers and transporters (Ahmed *et al.*, 2005). Pond fish farming has been proved to be a profitable business than rice cultivation. So many farmers in rural areas are converting their rice field into aquaculture pond (Islam *et al.*, 2002). Many pond fish farmers in rural areas have taken fish farming activities as their secondary occupation and most of the people involved in fish farming improved their socioeconomic condition through pond fish farming activities (Ara, 2005).

Noakhali is one of the most important districts for aquaculture and fish production in the Bangladesh. There are about 0.1 million ponds are present in the district, of which most of the ponds are suitable for culture (BBS, 2002). Charbata union can be considered as one of the ideal fish production areas in the district. Therefore, the enhanced fish production and good aquaculture practices would be ensured in this union if fishers adopt improved fish culture technology and community based fisheries management. Different constraints such as lack of technical knowledge, non-availability of credit and multi ownership of pond act as the major barriers to increase fish production in Bangladesh (Hossain, 1999).

Fisher folk are deprived of many amenities in life and considered as one of the poorest sections in our society (Rahman *et al.*, 2012a). Proper planning and development for the economically backward sector, like fish farmers, need up to date information on socioeconomic framework of them. The successful implementation of developmental program is hindered due to the lack of adequate and authentic information on socioeconomic condition of the target population (Ellis, 2000). Aquaculture practice has shown its potentiality as a promising and truthful metho-

dology to achieve self-sufficiency in food sector and also to alleviate poverty in a developing country like Bangladesh (Ahmed, 2003 and Al-Amin *et al.*, 2012). The sustainability of a livelihood depends on the ability to cope with and recover from stress and shocks and maintain to enhance its capabilities and assets both now and in the future (Chambers and Conway, 1992). The access arrangement and assessments of benefits to livelihood is particularly important as a social content (Hasan *et al.*, 2012; Amin *et al.*, 2012; Azucena *et al.*, 2001). Besides these, knowing poverty levels in any communities and the means to address it therefore requires a good understanding of social structures, social relations and essential elements of governance as well as pattern of change with particular reference to entitlement (Ahmed, 2012). Considering the above fact, the present study was carried out to assess the livelihood status and constraint faced by the fish farmer in the Charbata union under Noakhali district of Bangladesh.

## MATERIALS AND METHODS

### Study Area

The present investigation was imposed on Charbata, Mid Charbata, West Charbata, Charmajid and South Charmajid of Charbata union under Noakhali district in Bangladesh during the period between 15 May and 14 August, 2010.

### Collection of Data

The study was based on collection of primary and secondary data. Before collecting the primary data, a draft questionnaire was developed which was pre-tested with a few pond fish farmer. In the pre-testing, much attention was given to any new information in the draft questionnaire in order to reach the objectives of the study. According to the experience gained in pre-testing, the final

questionnaire was improved, rearranged and modified. The final questionnaire included the questions on the socioeconomic condition, age distribution, family size, literacy status, occupation, source of earning, income level, land ownership pattern, size of land holding, etc. Primary data were collected through Household survey using multiple methodological Participatory Rural Appraisal (PRA) tools such as Focus Group Discussion (FGD) and Crosscheck Interviews (CI) with key informants. Land used data of the studied area, subject related annual reports and documents were also collected to validate the field observation.

### Data Analysis

All the collected information were accumulated and analyzed by MS-Excel and then presented in textual, tabular and graphical forms to understand the present status of livelihood of pond fish farmers of the studied area.

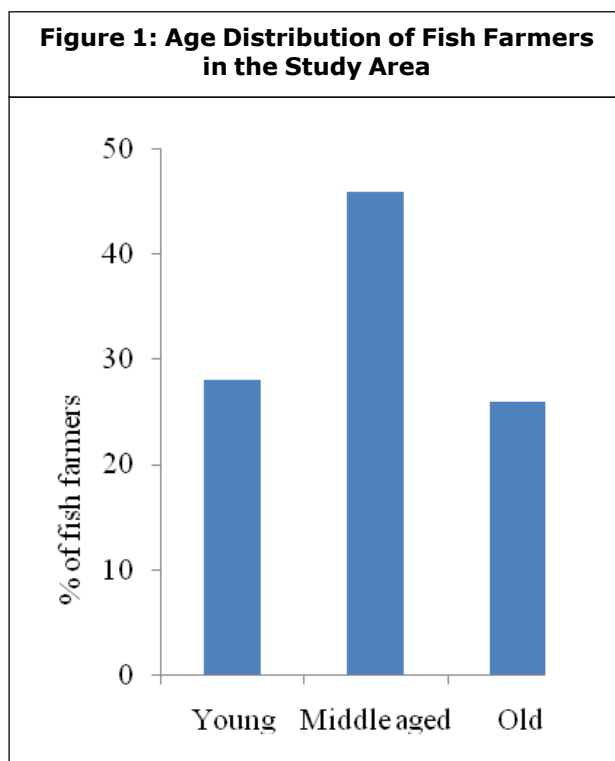
## RESULTS AND DISCUSSION

In this study, the livelihood status of fish farmers was the main aspect emphasizing on educational status, occupational status, family size, family type, housing condition, drinking water facilities, sanitary facilities, credit access, income and other socioeconomic issues. A total of 50 fish farmer were interviewed at five villages of Charbata Union on various aspects of livelihood status of the fish farmer. A detailed analysis were made on the following parameters and presented in this section.

### Human Capital

**Religion and Age Structure:** Religion plays a vital role in the social and cultural environment of people in a given area. It acts as a notable cons-

traint and modifies social pattern of people. Muslims were featuring as the absolute majority of the fish farmer in the study area. About 82% and 18% of the pond fish farmers were Muslims and Hindus, respectively. Different categories of age groups: young (20-35 years), middle aged (36-50 years) and old (51-65 years) were considered to examine the age structure. It appeared (Figure 1) that age group of 36-50 years was the highest (46%) and 51-65 years was the lowest (26%) considering all fish farmers. Ali *et al.* (2009) found that most of the fish farmers (50%) belonged to age group of 31 to 40 years in Mymensingh district. Bhaumik and Saha (1994) reported that age structure of fishermen at Sundarbans was ranged from 20 to 70 years which more or less agreed with the present findings.



**Family Size and Type:** In the present study, families were classified into two types as nuclear family and joint family. In the study area, 52% far-

mers lived in joint families and 48% in nuclear families. Joint family was predominant in the study area which also corresponds well with the findings of Ali *et al.* (2009) in Mymensingh district. The family size has considerable influence on the income and expenditure of the family. The average family size was estimated at 7.94 in a family which was very high and similar to the findings of Rahman *et al.* (2012b).

**Education:** In the present study, fish farmers were categorized into 5 categories on the basis of the level of education. Out of 50 fish farmers, 18% had no education, 16% had primary level, 42% had secondary level, 14% had higher secondary level and 10% had bachelor level of education (Table 1). The reported literacy rate was found higher than the national adult literacy level of 65% (BBS, 2002). Zaman *et al.* (2006) found that 23.3% farmers were illiterate whereas 14.4%, 8.9% and 6.7% were educated up to primary, secondary and higher secondary or above level respectively. On the contrary, Tasnoova *et al.* (2008) found that 60% Alternate-Rice-Fish farmers and 50% Rice-Cum-Fish farmers were educated up to graduate and above level of education. Khan (1986) stated that the level of education is a factor affecting utilization of pond for fish farming.

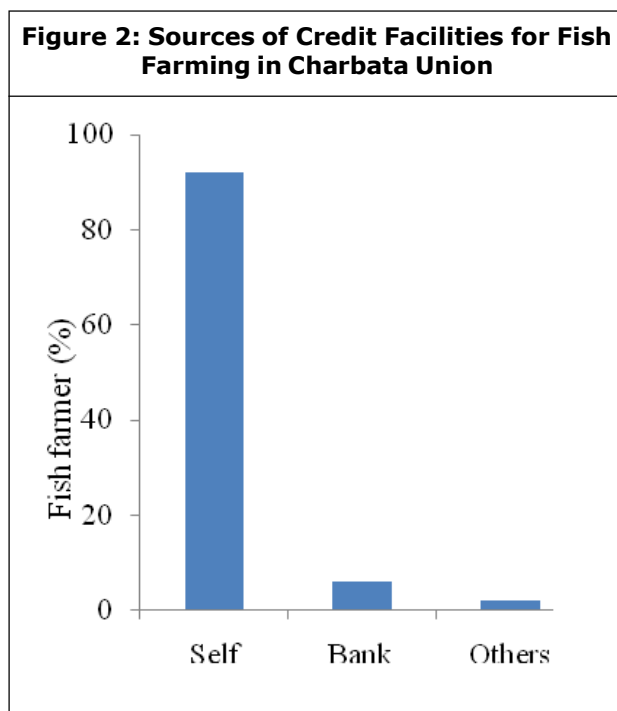
Education Level	No. of Farmer	% of Total Fish Farmer
Illiterate	09	18
Primary	08	16
Secondary	21	42
Higher secondary	07	14
Bachelor	05	10

### Natural Capital

Natural capital of people involved in fish farming represent the natural resources such as land, pond area, open water, fish seed, soil type, snail and tubifex for larvae and wider environmental goods that are critical for farmers and associated groups to support production. Large areas of land, water and natural resources had been used for fish production. Rapid population growth had to some extent led to accelerate natural capital depletion that had affected their income. Presence of canal, *beels* and existence of floodplains in the vicinity of the study area offer tremendous scope for harnessing natural resources for sustainable livelihood management of the fish farmers and fishing community.

### Financial Capital

**Sources of Credit:** In the present study, it was found that 92% of the farmers used their own money for fish farming, 6% of the farmers received loan from bank for farming activities and 2% of the fish farmers received loan from other sources



(Figure 2). Quddus *et al.* (2000) found that, only 34% farmers got bank loan for fish culture while majority (53%) of farmers expend from their own sources. In the study area, it was seen that small farmers were in disadvantageous situation due to poor financial resources for fish farming and they did not have financial support from institutional credit.

**Primary and Secondary Occupation:** In the study area, majority of the fish farmers were involved in agricultural farming as a principle occupation (38%), followed by business including small trading and shop keeping (26%). Only 6% of the pond fish farmers were involved in fish farming as their principal occupation (Table 2). It was reported that, only primary occupation was insufficient to provide adequate means of livelihood. 36% of the respondents stated that, they were involved in fish farming as their secondary occupation to secure their livelihood in the year round manner while, 22%, 28%, 8% and 6% were occupied in business, agriculture, services and poultry raising as the secondary occupation. Sarker (2004) found that 17%, 52%, 3% and 28% farmers were related to agriculture fish culture, business and others as secondary occupation in Habigonj district.

Occupation	Primary occupation	Secondary occupation
Agriculture	38	28
Fish culture	06	36
Business	26	22
Services	20	08
Day labours	10	0
Poultry raising	0	06

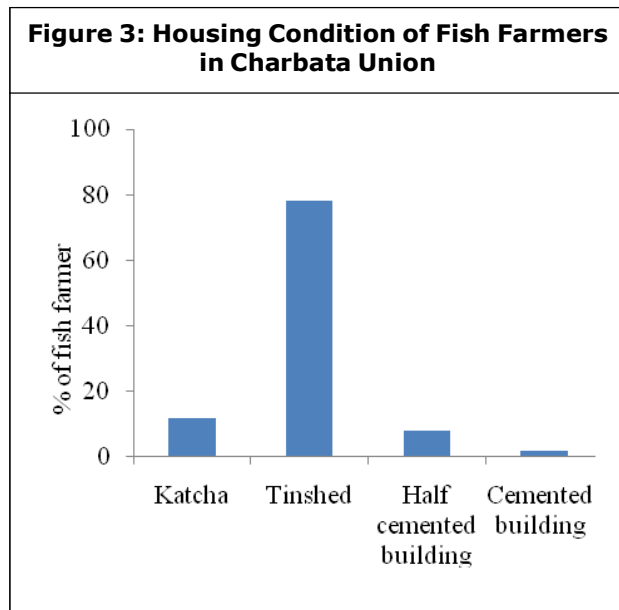
**Annual Income:** Annual income of fish farmers were varied from 24,000 to 1,00,00 BDT. The selected fish farmers were grouped into five categories based on the level of their annual income (Table 3). The highest percentage (34%) fish farmers earned BDT 75,000 to 1,00,000 per year, which was higher than the national average BDT 28,430 (BBS, 2004). In comparison of the present findings to the findings of Rahman *et al.* (2012a), it was found that the income level of the fish farmers of this area was relatively higher than the fishermen of the Nihjum Dwip which is situated at the adjacent Upazila to the study area. According to him, the highest percentage (46%) fish farmers earned BDT 50,000 to 75,000 per year, which was lower than the present findings.

Annual household income (BDT) (1 US\$ @ 80 BDT)	No. of Fish Farmers	% of Total Fish Farmers
Up to 300	01	02
300.01-625	09	18
625.01-937.50	13	26
937.51-1250	17	34
> 1250.01	10	20

### Physical Capital

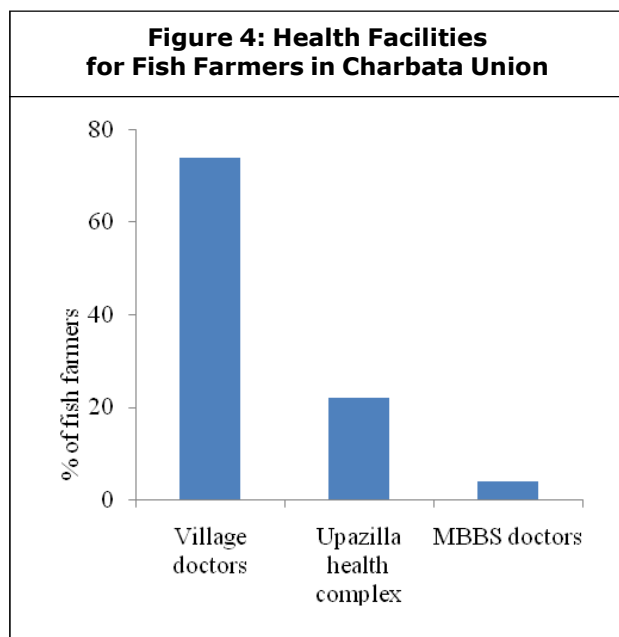
**Housing Condition:** The nature of house indicates the social status of the people. During the survey, attempts were made to find out the condition of living house of the people. Charbata union was not developed as like as the main town of Noakhali district, so most of the house of fish farmers (78%) was made of tin-shed. 12% houses were *katcha* (straw components), 8% half cemented building and 2% cemented building (Figure 3). Sarker (2004) observed in his studies that the housing structure of 70% farmers was

tin-shed, 8% *katcha* and 15% half cemented building.



**Land Ownership Pattern:** Average land area of fish farmers was 2.12 ha in Charbata union where homestead area 0.51 ha, cultivated land 1.37 ha and pond area 0.24 ha. Akter (2001) also found that pond farmers had average land area of 1.63 ha.

**Health Facilities:** In the study area, health facilities of the fish farmer were poor and it was



found that 74% of the fish farmers were dependent on village doctors, while 22% and 4% got health service from upazila health complex and MBBS (Bachelor of Medicine, Bachelor of Surgery) doctors respectively (Figure 4). Rahman (2007) found that 44% of the farmers received health service from village doctors, 29% from upazila health complex and 27% from MBBS doctors.

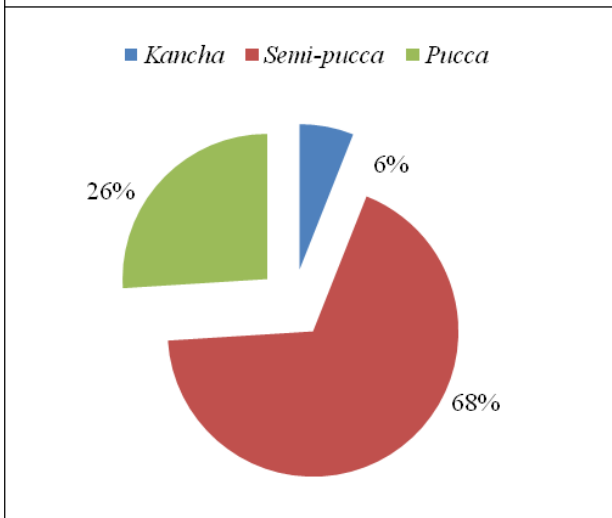
**Drinking water sources:** The provision of clean and safe drinking water is considered to be the most valued elements in the society. The study showed that 100% of the fish farmers used tube-well water for drinking purposes. It indicates a positive sign for health facilities in the study area. 62% of them had own tube-well and 38% of them collected drinking water from neighbors tube-well. Kabir *et al.* (2012) also found that 100% fishermen’s household used tube-well water for drinking purposes, among them 40% had their own tube-well, 50% used shared tube-well and remaining 10% used neighbors tube-well.

**Sanitary facilities:** In the study area, three types of toilets were used: (1) *kancha* toilet: made of bamboo with leaf shelter and inadequate drainage disposal, (2) *semi-pucca* toilet: made of tin or wood with inadequate drainage disposal and (3) *pucca* toilet: made of brick with good drainage disposal. It was found that 6%, 68% and 26% of fish farmers used *kancha*, *semi-pucca* and *pucca* toilet respectively (Figure 5). The present study revealed that the sanitary conditions of the fish farmers were relatively satisfactory than fish farmers in Mymensingh district where Ali *et al.* (2009 in his study found that 62.5% of the farmers had *semi-pucca*, 25% had *kancha* and 12.5% had *pucca* toilet.

**Electricity facilities:** In the present study, 74% fish farmers had electricity facilities and 26% had



**Figure 5: Sanitary Facilities Used by the Fish Farmers in the Study Area**



no electricity. Some of the farmers used solar energy for producing electricity. The use of electricity by the fish farmers in the study areas was higher than the national use of 35% (BBS, 2004).

**Social Capital**

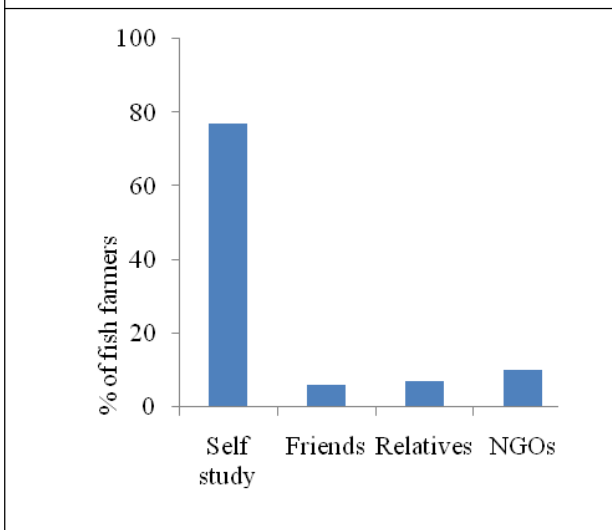
**Training and experience on fish farming:** In the study area, only 14% of the fish farmers received necessary training on improved fish

farming from Upazila Fishery Office with the help of Department of Fisheries of Bangladesh (DoF). Among the others, 78% of the farmers gained experience on fish farming by self study, 6% from friends, 7% from relatives and 10% from NGOs (Figure 6).

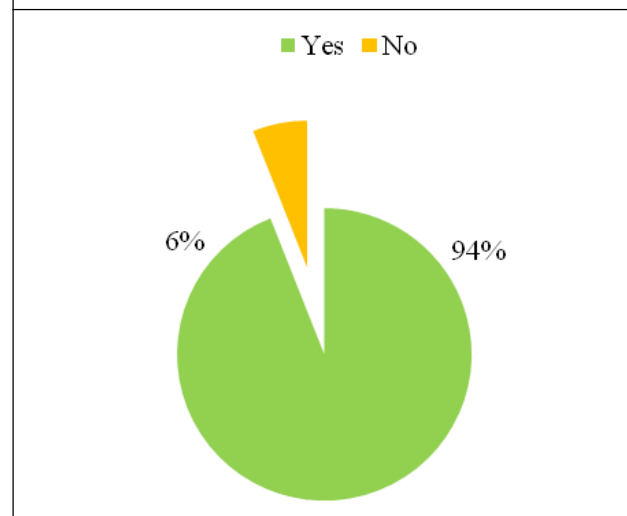
**Livelihood Outcomes**

Livelihood outcomes of fish farming and related activities were positive and most of the people had increased their income. Institutional and organizational supports, extension services, more fish farming knowledge and marketing were needed for sustainable livelihoods. The survey suggested that farmers had improved their socio-economic conditions through fish farming, as confirmed by 94% fish-farmers (Figure 7). Only 6% of the farmers had not improved their socio-economic conditions due to poor knowledge on fish farming, high price of fish feed, poor marketing facilities and lack of money for fish farming. Ara, (2005) found that 98% of the fish growers could improve their livelihood status through fish farming.

**Figure 6: Source of Training and Experience on Fish Farming in the Study Area**



**Figure 7: Improved Socio-Economic Condition Through Fish Farming**





## CONCLUSION

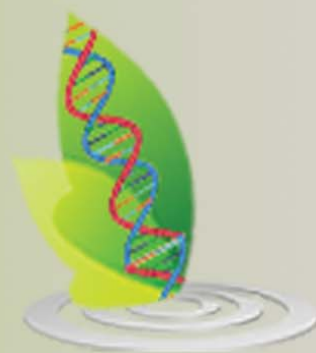
Considering the different observations during the present study, Charbata union was found to be potential area for fish culture and capture. In conclusion it can be said that, farmers should be given facilities on training program, and input availabilities, they should also be provided with credit facilities, motivated to utilize all types of water bodies for fish culture as well as integrated culture should be adopted. The fish farmers should be given amenities for education so that they can be well aware of their problems and prime rights. All the water resources should be utilized for fish culture to get maximum production by using suitable technology. More hatcheries should be established, so that farmers can get quality seeds easily.

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