ISSN: 2347-5129
(ICV-Poland) Impact Value: 5.62
(GIF) Impact Factor: 0.352
IJFAS 2016; 4(3): 288-292

www.fisheriesjournal.com
Received: 28-03-2016
Accepted: 29-04-2016

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Socio-Economic status of fish farmers in Dhumki Upazila under Patuakhali District, Bangladesh

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Abstract
In order to determine the socio-economic aspects of fish farmers in Dumki Upazila under Patuakhali district, a questionnaire survey was conducted in different villages of the Upazila. Data was collected from 40 farm owners for a period of six months from February to July, 2015. The present study indicated that majority of fish farmers (77.5%) were 26-45 years old. On the other hand, 17.5% respondents were less than 25 years old and 5% respondents were 18-15 years old. It was found that majority of the farmers (65%) gained their experience from relatives, 2% from friends and neighbors, 10% by self-education, 5% from DoF and 6% from NGO's. According to the study, about 60% farmers were involved in agriculture, 12.5% farmers involved for vegetable growing, 12.5% farmers involved in poultry rearing and 5% farmers involved in livestock farming. About 80% farmers were identified as medium producers (3000-4000) kg/ha./yr, 15% as low producers (2000-3000) and only 5% farmer identified as high producers. In respect of annual income of the fish farmers in the study area was found to have 82% moderate income (Tk. 100000-400000 Tk.), 15% low income (Tk.1000-100000) and 2.5% high income (above Tk.400000). It was observed that the livelihood status of the fish farmers in Dhumki Upazila was not satisfactory but people were very keen to produce fish and production was satisfactory in this area.

Keywords: Socio-economic status, Fishermen, Dhumki Upazila, Bangladesh

1. Introduction
Bangladesh is an agro-based developing country and is uniquely endowed with natural fisheries resources. Fish and Fisheries sector play an important role on the socio-economic development of Bangladesh from time immemorial and it is the part of its cultural heritage. This sector has a great contribution in national GDP (3.74%), foreign remittances (2.7%) and in the national animal protein consumption (58%) [1]. Fisheries sector of Bangladesh creates the opportunity of direct and indirect livelihood of about 12 million people [1]. Fishermen are deprived of many amenities of life and consisted as one of the most vulnerable communities in Bangladesh. Over the years, their economic condition had further deteriorated. Alam and Bashar [2] appraised the average per capital annual income of the fishermen, families to be BDT 2,442 i.e. about 70% lower than the per capital income of the country as a whole.
Livelihood can be defined as the capabilities, the assets (natural, physical, human, financial and social capital), the activities and the accesses to these (mediated by institutions and social relations) that together determine the living gained by the individual household [3]. According to them, a livelihood can be sustainable when it has the ability to cope with and recover from stresses and shocks and maintain or improve its capabilities and assets both now and in future, but not undermining the natural resource base. For sustainable development and poverty alleviation, different approaches had been adopted and the sustainable livelihood approach had been gradually expanded with its own core and principles for poverty focused development activities [4]. A sustainable livelihood is based on the development to improve the progress in poverty elimination by assessing the appropriate objectives, scope and priorities [5].
This area consisting of fishery plays a very important role in the alleviation of rural poverty and supplying food to the poor fishing community. However, the livelihood status of these fishermen is not satisfactory. Considering the above fact, the present study was carried out to assess the existing fish farming in pond system and to know the socio-economic aspects of fish farmers.

2. Materials and Method

2.1 Study area

The present study was carried out on the fishermen community in some selected locations of Dumki Upazila under Patuakhali districts of Bangladesh during the period between February and July 2015 (Fig. 1).

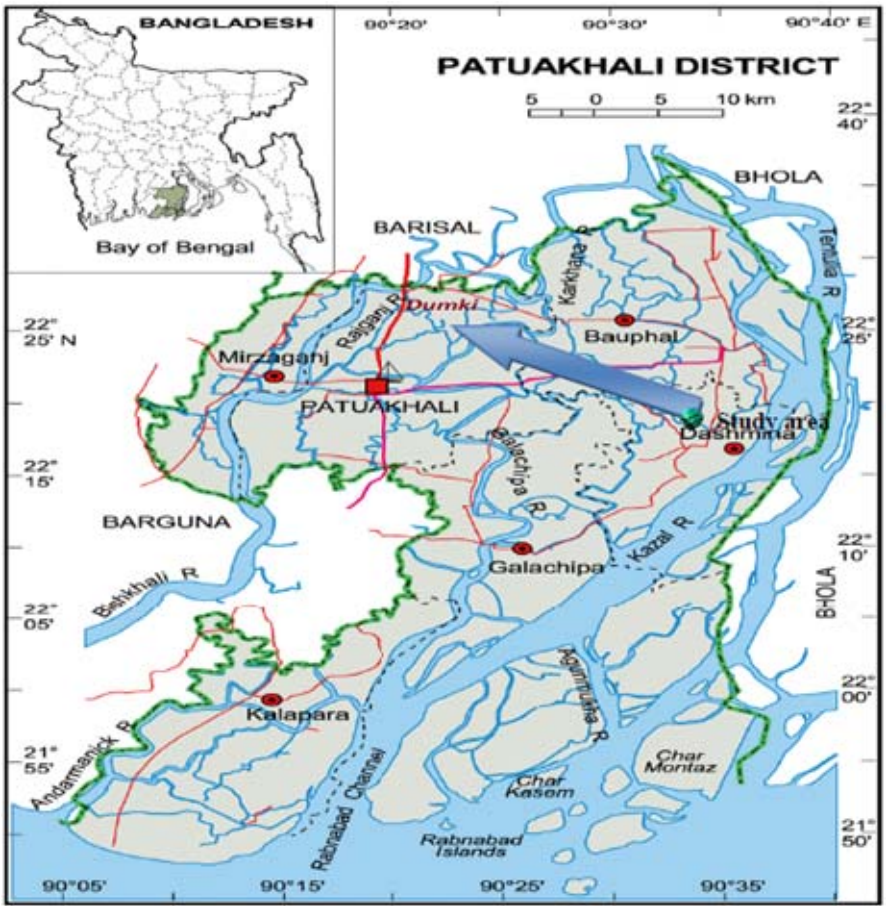

Fig. 1: Location of the study area

2.2. Target groups

Fish farmers in the study area, a large number of farmers earned their livelihood in fish farming and its associated activities. It was reported that a few farmers were from solvent families, and almost all small and marginal farmers were poor. Most of these poor farmers live in the rural areas in Upazila and culture fish in order to supplement their family income.

2.3 Sample number and sampling procedure

It was not possible to include all the ponds under the study area because of limitation of time and resources. For the selection of samples for present study two things need to be taken into considerations. The first one is the sample size which should be as large as to allow for adequate degrees of freedom in the statistical analysis. The second one is the administration of field research; processing and analyzing of data which should be manageable within the limits imposed by physical, human and financial resources. Considering all these aspects forty farmers were selected from Dumki Upazila randomly to address fish pond with different types of culture system, management practices and different types of family status of fish farmer.

2.4 Design and Pre-test of questionnaire

For data collection, a set of interview schedule was designed for this study. Both close and open questions were used in the questionnaire. The draft questionnaire was tested with 15 fish farmers in the study area. In the pilot survey, much attention was given to any new information, which was not designed to be asked, but was important and informative towards the objectives. The questionnaire was changed modified and rearranged according to the experience gathered in pre-setting of questionnaire. The final interview schedule was developed in logical sequence so that fish farmers could answer systematically.

2.5 Data collection method

Fish farmers' data were collected using questionnaire interviews, participatory rural appraisal (PRA) tools such as focus group discussion (FGD) and cross check interview with key informants.

2.6 Questionnaire interview

The questionnaire interviews were conducted at the pond sites in the selected area. Before going to make an actual interview, a brief introduction about the objective of the study was given to each of the farmers and assured them that all information would be kept confidential. Each question was explained clearly and asked systematically for their clear understanding. At the time of interview the physical conditions of the ponds and the fish cultivation methods like pond repairing,

application of food and fertilizers, harvesting etc. were observed as a result there was a scope to well understanding the fish production technology in the study area. Time required for each interview was about 45 minutes to an hour.

2.7 Focus Group Discussion
The PRA is a group of methods to collect information from target group in a participatory way. For this research PRA tool such as Focus Group Discussion (FGD) was conducted with fish farmers. FGD is a group meeting where farmers from the target communities discuss selected topics. In this research, FGD was used to get an overview of particular issues such as existing fish production systems, constraints of fish farming, farmer's socioeconomic condition and their livelihood etc.

2.8 Cross-check interviews
After collecting the data through questionnaire interviews and FGD, it was necessary to check the information for justification of collected data. If there were such items, which had been contradictory, then information's were collected from key information's. Cross-check interviews were conducted with key information's such as Senior Upazila Fisheries Officer (SUFO), Association for Socio-economic Development (ASED), relevant NGO workers, Chairman and Members of the union councils, fry traders etc. Key informants were interviewed at their officers and/or houses.

2.9 Data processing and analysis
After data collection, these were verified to eliminate errors and inconsistencies. Any kind of inconsistencies in collected data were searched and discarded from the data. Data were processed and finally analyzed using tabular method. The data of local units were converted into international unit before analysis.

3. Results and Discussion
3.1. Age of the Fish farmers
The age distribution of fish farmers has an important influence on labour and influences on adoption of new pond practice. In the study area, majority of fish farmers (77.5%) were 26-45 years old. On the other hand, 17.5% respondents were less than 25 years old and 5% respondent, 18-15 years old (Table 1). Ahmed [6] in Tangail and Ahmed [7] in coastal region reported 66% and 70% under 40 years age respectively. Ali *et al.* [8] have found that most of the fish farmers (50%) belongs to the age group of 31 to 40 years in Mymensingh district and Ali *et al.* [9] have found that most of the fishermen (60%) belongs to age group of 31 to 40 years in the Lohalia River, Patuakhali.

Table 1: Age of the fish farmers

Age categories	No of respondents	% of respondents
Young(18-25)	2	5
Middle (26-45)	31	77.5
Old (>45)	7	17.5
Total	40	100

3.2. Family status
In rural Bangladesh families are classified into two types: (i) separated family or nuclear family, married couples with children and (ii) joint family, group of people related by blood and or law. In the fish Pond community of the study area, it was found that 42.5% fish farmers lived with joint families and 57.5% lived in separated families (Table 2). About 42.5% of the fish farmers lived in nuclear family and the rest (57.5%) in joint family in Mymensingh district [8].

Table 2: Family type of fish farmers

Family type	No. of Fish farmers	% number of Fish farmers
Joint	17	42.5
Nuclear	23	57.5
Total	40	100

3.3 Family member of Fish farmers
Fish farmers were categorized into three groups such as small, middle and large. In the study area, 62.5% respondent contained 0 to 7 family members, 32.5% respondent contained 8 to 12 family members and 5% respondents were above 12 (Table 3). Most of the fish farmer (45%) belonged in the 4 to 5 member's family in Mymensingh district [8].

Table 3: Family member of fish farmers

Categories	No. of respondent	% of respondent
Small (0-7)	25	62.5
medium (8-12)	13	32.5
Large (>12)	2	5
Total	40	100

3.4 Marital status
In the study area it was found that the majority of the respondents were married (82.5%) whereas about 17.5% of farmers were unmarried (Table 4). Hossain (2009) [10] have studied on the socio-economic condition of the fishermen in Jessore District and have found that 68% fishermen were married and rests (32%) were unmarried.

Table 4: Marital status of fishermen in the study area

Marital status	No. of farmer	% number of farmer
Married	33	82.5
Unmarried	7	17.5
Total	40	100

3.5 Religion
In the study area 100% of interviewed fish farmers were found to be Muslims in Table 5. In the study of Ali *et al.* [9] found that most of the fishermen were Muslim (75%) in the Lohalia River, Patuakhali. Hassan and Mahmud's [11] have studied on the coastal fishing community in Kuakata and have found that the majority of fishermen were Muslim (93.94%).

Table 5: Religious status of fish farmers in the study areas

Religion status	No. of farmer	% number of farmer
Muslim	40	100
Hindu	0	0
Total	40	100

3.6 Other occupation of Fish farmers
About 60% farmers were involved in agriculture, 12.5% farmers involved for vegetable growing, 12.5% farmers involved in poultry rearing and 15% farmers involved in livestock farming (Table 6). It was found that the maximum (60%) of fishermen were involved in fishing as primary income source while 28% as agriculture and 12% as others (day labor, van driving). On the other hand the maximum (40%) of fishermen was involved in fishing as secondary

income source while 16% agriculture and 44% others (day labor, van driving) as secondary income source [12].

Table 6: Other occupation of Fish farmers

Other occupation	No. of respondent	% of respondent
Agriculture	24	60
Vegetables grower	5	12.5
Poultry rearing	5	12.5
Livestock farming	6	15
Total	40	100

3.7 Education of Fish farmers

Amongst fish farmers, education attainments help to develop conceptual skill and also facilitate the acquisition of technical skill, which can have direct benefit on income generation, expenditure and saving activities. The Table 7 reveals that 20% fish farmers were illiterate, 32.5% of pond owners had education up to primary level where 17.5% had SSC level, 15% had HSC level and only 15% had bachelor level of education in the study area. Literacy rate was not satisfactory in the communities of the Paira River. Ahamed's study [7] in Sundarbans and Mahbubullah [13] in the polder and areas obtained literacy rate of 25% and 23% respectively.

Table 7: Education of Fish farmers

Education	No. of respondent	% of respondent
No education	8	20
Primary	13	32.5
SSC	7	17.5
HSC	6	15
Bachelor	6	15
Total	40	100

3.8 Receiving of training

In the study, of the total (40) interviewed fish farmers, 22.5% respondent receiving training and 77.5% were no receiving training of fish culture. Reza *et al.* [12] have found that only 4% of fishermen had received training about fishing and 96% had not received any training around the Atrai and Kankra Rivers of Chirirbandar Upazila under Dinajpur District.

Table 8: Receiving of training

Receiving of training	No. of respondent	% of respondent
Yes	9	22.5
No	31	77.5
Total	40	100

3.9 Land area of fish farmer

The sample ponds were grouped into three categories depending upon their different sizes in the surveyed area, Small land (0 to 20 decimal), Medium land (20- 50 decimal), Large land (>50 decimal). The present study showed that, 7.5% respondent occupied small (0 to 20 decimal) land area, 57.5% respondent have medium (20- 50 decimal) whereas 35% respondent have large land area (above 50 decimal) (Table 9). Momotaz (2009) [14] found that the highest number of fishermen (60%) had above 50 decimal lands. So, this result is different from the present study because of land ownership varied place to place.

Table 9: Land area of fish farmer

Land area (Decimal)	No. of Farmer	% of land area
Small (0-20)	3	7.5
Medium (20-50)	23	57.5
Large (above 50)	14	35
Total	40	100

3.10 Pond size

The sample Ponds were grouped into three categories depending upon their different sizes in the surveyed area, Small Pond (1 to 4 decimal), Medium Pond (5- 8 decimal), Large Pond (>8 decimal). From the study, 15% respondent (1 to 4 decimal) Pond area, 55% respondent (5- 8 decimal) and above 30% respondent large land area. It was revealed that average pond size was 0.11 ha (27.17dec) in Maulovibazar district [15].

Table 10: Different pond size

Pond size (Decimal)	No. of respondent	% of respondent
Small Pond (1- 4)	6	15
Medium Pond (5- 8)	22	55
Large Pond (>8)	12	30
Total	40	100

3.11 Pond ownership

In the present study area 70% of farmers having single ownership and 30% having multiple ownership (Table 11). Reza *et al.* [12] have found that only 24% of fishermen had own pond and 76% had no pond around the Atrai and Kankra Rivers of Chirirbandar Upazila under Dinajpur District.

Table 11: Ownership of the pond in the study areas

Ownership	No. of Farmer	% Number of Farmer
Single	28	70
Multiple	12	30
Total	40	100

3.12 Production of fish

Fish production was continuously increasing in the surveyed area. Year wise total and average fish productions of surveyed ponds were respondent in respect to are shown in Table 12. The production of 15% respondent was from 2000 to 3000 kg/ha/yr, similarly the production 80% respondent was from 3000 to 4000 kg/ha/yr and 5% respondent was from 4000 to 5000 kg/ha/yr. It was observed in Northwest Bangladesh that the average annual yield was 1,025 kg/ha/yr which was lower than the present study [16].

Table 12: Total production (kg/ha/yr)

Production (kg/ha/yr)	No. of respondent	% of respondent
Low (2000-3000)	6	15
Medium (3000-4000)	32	80
High (4000-5000)	2	5
Total	40	100

3.13 Annual income

In the study area, it was observed that the majority (82.5%) of respondent had moderate annual income which was ranged between (Tk. 100000-400000). On the other hand, 15% respondents had low annual income which was (Tk. 1000-100000) and only 2.5% fish farmers income was high (above Tk. 400000) (Table 13). Khan (2011) [17] have found that the highest income of fishermen was above TK 60000, moderate income was Tk. 30000-60000 and lowest income was TK. 10000-30000. Ali (2013) [18] at the Atrai river in Dinajpur district have found that the highest annual income ranged from TK. 61000-90000 and the lowest annual income ranged from TK. 30000-40000 which is very similar to the present study.

Table 13: Annual income of fish farmers (Tk/ha/yr)

Annual income (Tk.)	No. of farmer	% of farmer
Low (1000-100000)	6	15
Moderate (100000-400000)	33	82.5
High (above 400000)	1	2.5
Total	40	100

3.14 Fish marketing system

From the survey it was found that 5% of the farmer sold their captured fishes to the consumer directly whereas 65% sold their fish to either retailer or other farmer. The cent percent (100%) of farmer marketed their fish in local market and received price in cash from the purchaser. It was found that 88% of fishermen sold their catch to the consumer directly in the local market, whereas 8% sold their catch to retailer or whole seller and 4% sold to other fishermen or neighbor [12].

4. Livelihood Constraints of the Fishermen

Most of the fishermen were facing various problems during fishing and marketing their goods in the local market. The main problem was documented as extortion by the local extortionist, other problems were insufficient credit facility, lack of marketing facilities, lack of knowledge of fishing, lack of appropriate gears and disturbances by dacoits and thieves and sometimes by the local people themselves. Most of the fishermen were very poor and they have limited resources to buy nets and other fishing equipment's. They are ignored in all respect in the society. Most of them are illiterate and live from hand to mouth. Because of extreme poverty the children of those fishers often go for fishing rather than going to school. As a result, generation after generation, they remain illiterate and not being able to contributes for the improvement of their community.

5. Conclusion

The livelihood status of the fish farmers in Dhumki Upazlia was not satisfactory. The education level of the fishermen was so poor. Due to the lack of awareness as well as the poor income of the fishermen families, the study of the poor fishermen student doesn't go so far. The government should take some important stage by providing some sorts of management policy as well as providing of some extra providence during the ban season of the fishing. That may be done within the providing of the VGF card. Some forms of NGO's activity must be ensured in the adjacent area for the improvement of the life leading status of the Fishermen. The NGO's must be helpful about the providence of the loan which may be used for the up gradation of the income procedure. From the survey it was identified that many socio-economic constrains exist in fishermen communities. So there is a necessity to manage and provide proper guidelines and training for the proper use of resources to improve their socioeconomic and livelihood status.

6. References

1. DoF (Department of Fisheries) Saranica, Matsya Pakhya Sankalan, Annual Report, Ministry of and Fisheries and Livestock. The Government of Peoples of Bangladesh, Dhaka, 2011, 120.
2. Alam MF, Bashar MA. Structure of cost and profitability of small scale riverine fishing in Bangladesh. *J Res. Prog.* 1995; 9:235-241.
3. Chambers R, Conway R. Sustainable Rural Livelihoods: Practical Concept for the 21st century, Discussion paper, 1992; 296.
4. DFID. Sustainable livelihoods guidance sheets, the Department for International Development (DFID), London, UK, 1998.
5. Scones I. Sustainable rural livelihood: a frame work for analysis. IDS working paper No. 72, Brighton: IDS, UK, 1998.
6. Ahamed NU. Report of the fishermen's socio-economic survey. Fisheries survey and Monitoring program, Department of fisheries, Tangail, 1996, 4.
7. Ahamed N. A study on socio-economic aspects of coastal fishermen in Bangladesh. *Bangladesh J Fish.* 1999; 24:(1-2):20-26.
8. Ali H, Azad MAK, Anisuzzaman A, Chowdhury MMR, Hoque M, Sharful MI. Livelihood status of the fish farmers in some selected areas of Tarakanda Upazila of Mymensingh district. *J Agro. Environ.* 2009; 3(2):85-89.
9. Ali MM, Hossain MB, Minar MH, Rahman S, Islam MS. Socio-Economic Aspects of the Fishermen of Lohalia River, Bangladesh. *Middle East J Sci. Res.* 2014; 19(2):191-195.
10. Hossain MA. Socio-economic Condition of Fish Farmers in Jessore District, Khulna, B.Sc. Thesis, Fisheries and Marine Resource Technology Discipline, Khulna University, Khulna, 2009.
11. Hasan J, Mahmud SM. Study on the coastal fishing community of the Kalaiapara village: facts and observations. A project thesis in Fisheries and Marine Resources Technology Discipline, Khulna University. Khulna, 2002, 50.
12. Reza S, Hossain MS, Hossain U, Zafar MA. Socio-economic and livelihood status of fishermen around the Atrai and Kankra Rivers of Chirirbandar Upazila under Dinajpur District. *IJFAS* 2015; 2(6):402-408.
13. Mahbubullah M. Case study of polder and estuaries fisheries community in Bangladesh. In: Socio-economic study of tropical fishing community in Bangladesh. A report for Food and Agriculture Organization (FAO), Rome, 1986, 12-14.
14. Momotaz S. Socio-economic Condition of Small Indigenous Species Beneficiaries at Three Villages (Garakhola, Chatiani & Jamira) of Phultala, Khulna, B.Sc. Thesis, Fisheries and Marine Resource Technology Discipline, Khulna University, Khulna, 2009.
15. Islam MA. Recent trends in fisheries sector of Bangladesh. In: Changing Rural Economy of Bangladesh. Bangladesh Economic Association, Dhaka, 2000, 78.
16. Islam MS, Dewan S. Economics of pond fish culture in some selected areas of Bangladesh. *Bangladesh J of Aqua.* 1986; 8(1):57-61.
17. Khan MAR. Study on Fish Biodiversity and Livelihood Status of Fishing Community of the Tista River in Rangpur district, MS Thesis, Department of Fisheries Management, Bangladesh Agricultural University, Mymensingh, 2011.
18. Ali FIK. Present Status on Fisheries and Livelihood of Fishermen in Atrai River, Dinajpur, MS Thesis, Department of Fisheries Management, Bangladesh Agricultural University, Mymensingh, 2013.