

Assessment of the livelihood status of the fish farmers in some selected areas of Kahaloo upazilla, Bogra

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Abstract: Livelihood conditions of the fish farmers in three unions namely Kahaloo, Muroil and Durgapur unions under the Kahaloo Upazilla of Bogra District were studied from July to December, 2006. A total of 90 farmers (30 in each union) were interviewed with a well structured questionnaire. The livelihood outcomes were positive and most farmers (81%) have found to be improved their social and economic conditions through pond fish production. The fish pond owners were in the age groups of 21-40 years (54 %) of which 13 % were illiterate, 11 % were capable to sign only and the rest 76 % farmers received formal education. Agriculture was the main occupation of the sample farmers and most of them had chosen fish culture as their subsidiary occupation. The average family size was 6.93 and most of the farmers (40%) had tin shed house and the households (43%) were dependent on village doctors. The sanitary conditions of the fisher were very poor and most of them (48%) used semi pucca toilets. Multiple ownerships, lack of sufficient fund, high price of input, lack of marketing facilities, lack of technical knowledge, non-availability of fish seed, etc were the major constraints. The farmers are great need of Government patronization to remove these problems.

Key words: Constraint, fish farmer and livelihood condition.

Introduction

Fish and fisheries are indispensable part in the life and livelihoods of the people of Bangladesh since time immemorial. It is the part of our cultural heritage. Fisheries sector is the most important sub-sectors of the national economy in Bangladesh. Fisheries sector plays very important role in the socio-cultural and economic life of Bangladesh. For sustainable rural development and poverty elimination, different approaches have been adopted and implemented in different context and the periods of time. Livelihood comprises 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 (Chambers and Conway, 1992). About 12 million people (10% of total population) of the country are directly or indirectly depend on fisheries sector for their livelihood (DoF, 2005). For sustainable rural development and poverty elimination in fishery sector is playing an important role. According to Carney (1999), a sustainable livelihood approach is a way of thinking about the objectives, scope and priorities for development, in order to enhance progress in poverty elimination (Scones, 1998). Considering the financial hardship and other complexities of the rural fish farmers, it is important to analyze their livelihood status. Therefore, the present study was undertaken to determine the livelihood status of the fish farmers of Kahaloo Upazilla, Bogra and to identify the socio-economic problems / constrains associated with fish farming.

Materials and Methods

Three Unions namely, Kahaloo, Muroil and Durgapur in Kahalu upazilla under Bogra district were selected for the study and data were collected during July to December 2006 and 90 farmers were selected

randomly. For data collection, a set of interview schedule was designed. Data were collected from the fish farmers using questionnaire interviews, Participatory Rural Appraisal (PRA) tools such as Focus Group Discussion (FGD) and Cross-check interview with key informants. Data were processed and finally analyzed using tabular method.

Results

Livelihood Assets

Financial Capital: *Income level of fish farmers*

The selected pond owners were grouped into 5 categories according to the level of their annual income for all locations (Table 1). It reveals that the highest proportion of income was Tk. 50001 to 75000 (40 %) while the lowest proportion was Tk 100001 to 120000 (8 %).

Sources of income: Agriculture, fish culture, small trading and services were the main sources of income of the fisher (Table 2). The fish pond owners were dependent on agriculture (40 %), fish culture (36 %), small trading (14 %) and services (10 %) respectively as their main occupation. On the other hand, 31 %, 49 % and 20 % of the total fish pond owners were related with agriculture, fish culture and small trading respectively as their subsidiary occupation.

Savings: It was found that 38% of the respondents had savings (Table 3). They saved a mean of Tk. 27852 per year from agriculture, fish farming, business, service and other activities. The rest of the farmers (62%) could not save money due to poor resources and household expenses.

Credit: It was found that 69% of farmers used their own money for fish farming while the rest 31% of the farmers received loans (Table 4). Different NGOs, banks, moneylender etc, providing credit to the farmers; the amount of loan varies depending on pond size, land holding, production costs and pond management.

Table 1. Income level of fish pond owners

Income level (Tk)	Study Areas							
	Kahaloo		Muroil		Durgapur		All locations	
	n=30	%	n=30	%	n=30	%	N=90	%
Up to 25000	2	7	1	3	5	17	8	9
25001-50000	4	13	6	20	10	33	20	22
50001-75000	13	44	15	50	8	27	36	40
75001-100000	7	23	6	20	6	20	19	21
100001-120000	4	13	2	7	1	3	7	8
Total	30	100	30	100	30	100	90	100

(n=Sample size)

Table 2. Income source of the fish pond owners

Occupation of fish pond farmers	Study Areas							
	Kahaloo		Muroil		Durgapur		All locations	
	n=30	%	n=30	%	n=30	%	N=90	%
Main Occupation								
Agriculture	13	44	10	33	13	43	36	40
Fish culture	10	33	13	44	9	30	32	36
Small trading	3	10	4	13	6	20	13	14
Services	4	13	3	10	2	7	9	10
All groups	30	100	30	100	30	100	90	100
Subsidiary occupation								
Agriculture	8	27	10	33	10	33	28	31
Fish culture	18	60	14	47	12	40	44	49
Small trading	4	13	6	20	8	27	18	20
Services	0	0	0	0	0	0	0	0
All groups	30	100	30	100	30	100	90	100

(n=Sample size)

Table 3. Savings by farmers in the study area

Savings	Study Areas							
	Kahaloo		Muroil		Durgapur		All locations	
	n=30	%	n=30	%	n=30	%	N=90	%
Yes	13	43	10	33	11	37	34	38
No	17	57	20	67	19	63	56	62
Total	30	100	30	100	30	100	90	100

(n=Sample size)

Table 4. Loan received by farmers for farming

Received loan	Study Areas							
	Kahaloo		Muroil		Durgapur		All locations	
	n=30	%	n=30	%	n=30	%	N=90	%
Yes	7	23	10	33	11	37	28	31
No	23	77	20	67	19	63	62	69
Total	30	100	30	100	30	100	90	100

(n=Sample size)

Table 5. Acquired experience of farmers for fish farming

Acquired experience	Study Areas							
	Kahaloo		Muroil		Durgapur		All locations	
	n=30	%	n=30	%	n=30	%	N=90	%
Self-study	11	37	11	37	15	50	37	41
Friend-neighbours	9	30	9	30	8	27	26	29
NGO	6	20	7	23	5	17	18	20
DoF	4	13	3	10	2	6	9	10
Total	30	100	30	100	30	100	90	100

(n=Sample size)

Natural capital

Natural capital of fish farming represents the natural resources such as land, water, fish seed and environmental goods that are critical for farmers and associated groups to support production.

Social capital

Acquired experience of fish culture

Forty nine percent of farmers were acquired their experience by self-study, 29% gained from their friends and neighbours and 20% and 10% obtained experience from NGOs and DoF respectively. The higher percentage (50%) of self-taught fish farmers was in Durgapur (Table 5).

Training for fish farming

In recent years, DoF, NGOs and others institutes have been providing training to farmers. BRAC, PROSHIKA etc are notable in providing training about fish culture practice. In the surveyed area, 42% of the total farmers received training for fish farming (Table 6).

Human capital: Age structure

Eight percent of fisher were belonged to the age groups of $0 \geq 20$ years, 54 % belonged to 21-40 years of age groups. About 31 % of fish pond owners were 41-60 years of age groups and 7 % of fish pond owners above 60 years of age. The majority was in the age groups of 21-40 years and they were in a position to put physical effort for fish production (Table 7).

Family Size

It was found that the average family size was the highest in Muroil (7.19 members) followed by

Durgapur (6.83 members) and Kahaloo (6.79 members) union respectively (Table 8).

Literacy status

Out of 90 fish pond owners, 13 % were illiterate, 11 % were can sign only, 24 % had education up to primary level, about 28 % had S.S.C level, 17 % had H.S.C. level and 7 % had graduation and above level of education in the study areas (Table 9).

Physical Capital: Housing conditions

It was evident that majority of the fish pond owners had tinshed house (40 %), followed by half building (28 %) and earthen house (21 %).

Health facilities

The study showed that 43% of households were dependent on village doctors, while 31% and 18% got health service from the upazila health complex and MBBS doctors respectively (Table 11).

Sanitary facilities

Three types of toilets were used by the farmers: 1) Katcha, 2) Semi-pucca and 3) Pucca toilet. The higher access to good sanitation was in Kahaloo (27%) followed by Muroil (23%) and Durgapur (20%) respectively (Table 12).

Livelihood outcomes

Most of the farmer were improved their socio-economic condition through fish farming (Table 13).

Socio-economic constraints of fish farming

Major social problems of the study areas were multiple ownership (23%), theft of fish (53%) and social interference (17%) by the influential persons. Lack of sufficient funds, marketing facilities, fishing equipments, high input price and low product price and loss of fish due to over topping of pond, unavailability of quality fish seed were also the striking problems.

Table 6. Training received by farmers for farming

Training received	Study Areas							
	Kahaloo		Muroil		Durgapur		All locations	
	n=30	%	n=30	%	n=30	%	N=90	%
Yes	13	43	14	47	11	37	38	42
No	17	57	16	53	19	63	52	58
Total	30	100	30	100	30	100	90	100

(n=Sample size)

Table 7. Age distribution of the fish farmers in the study area

Age groups (year)	Study Areas							
	Kahaloo		Muroil		Durgapur		All locations	
	n=30	%	n=30	%	n=30	%	N=90	%
$0 \geq 20$	2	7	4	13	1	3	7	8
21-40	15	50	19	63	15	50	49	54
41-60	9	30	7	24	12	40	28	31
Above 60	4	13	0	0	2	7	6	7
All groups	30	100	30	100	30	100	90	100

(n=Sample size)

Table 8. Average family size of fish pond owners

Study areas	Male		Female		Total	
	Average family size (male)	%	Average family size (female)	%	Average family size (person)	%
Kahaloo	3.43	50.52	3.36	49.48	6.79	100
Muroil	3.73	51.88	3.46	48.12	7.19	100
Drugapur	3.6	52.71	3.23	47.29	6.83	100
All locations	3.58	51.66	3.35	48.34	6.93	100

Table 9. Literacy level of the fish pond owners

Level of education	Study Areas							
	Kahaloo		Muroil		Durgapur		All locations	
	n=30	%	n=30	%	n=30	%	N=90	%
Illiterate	3	10	4	13	5	17	12	13
Can sign	2	7	3	10	5	17	10	11
Primary	5	17	7	23	10	33	22	24
S.S.C level	10	33	10	33	5	17	25	28
H.S.C level	7	23	4	14	4	13	15	17
Graduate and above	3	10	2	7	1	3	6	7
All groups	30	100	30	100	30	100	90	100

(n=Sample size)

Table 10. Housing status of sample household

Housing condition	Study Areas							
	Kahaloo		Muroil		Durgapur		All locations	
	n=30	%	n=30	%	n=30	%	N=90	%
Earthen	4	13	6	20	9	30	19	21
Tinshed	9	30	14	47	13	43	36	40
Half building	12	40	7	23	6	20	25	28
Building	5	17	3	10	2	7	10	11
Total	30	100	30	100	30	100	90	100

(n=Sample size)

Table 11. Health service used by farmers

Health service	Study Areas							
	Kahaloo		Muroil		Durgapur		All locations	
	n=30	%	n=30	%	n=30	%	N=90	%
Village doctor	13	43	15	50	11	37	39	43
Upazila health complex	8	27	6	20	14	47	28	31
MBBS doctor	7	23	5	17	4	13	16	18
Others	2	7	4	13	1	3	7	8
Total	30	100	30	100	30	100	90	100

(n=Sample size)

Table 12. Good sanitation of fish farmers in the study area

Sanitary facilities	Study Areas							
	Kahaloo		Muroil		Durgapur		All locations	
	n=30	%	n=30	%	n=30	%	N=90	%
Katcha	6	20	9	30	11	37	26	29
Semi-pucca	16	53	14	47	13	43	43	48
Pucca	8	27	7	23	6	20	21	23
Total	30	100	30	100	30	100	90	100

(n=Sample size)

Table 13. Improved socio-economic conditions through fish farming

Improved Socio-economic conditions	Study Areas							
	Kahaloo		Muroil		Durgapur		All locations	
	n=30	%	n=30	%	n=30	%	N=90	%
Yes	22	73	25	83	26	87	73	81
No	8	27	5	17	4	13	17	19
Total	30	100	30	100	30	100	90	100

n=Sample size

Discussion

It was found that most of the farmers (40%) were included in annual income level of Tk. 51000-75000 (Table 1). Khan (1986) stated that level of family income was an important economic factor affecting utilization of pond fish farming. The average income of fish farmers is seemed to be better than the annual national income of Tk. 22500 (BBS, 2004). In the study area, 40% pond owners were related to agriculture, 14% to business and 36% to fish culture as their main occupation (Table 2). Rana (1996) observed that 28% were related to agricultural activities, 35% to business and 17% to fish culture as their main occupation.

From the study, it was found that 38% of the respondents had savings (Table 3). However, the rest of the farmers (62%) could not save money due to poor resources and household expenses. Alam (2006) reported that only 36% of the farmers in Mithapuqur upazila under Rangpur district had savings while the rest had no savings.

It was found that 69% of farmers used their own money for fish farming while the rest 31% of the farmers received loans and the highest percentage of loans. Alam (2006) stated that only 24% of the farmers in Mithapuqur upazila under Rangpur district received loan while the rest 76% did not get any type of financial support. At about, 41% of farmers acquired their experience by self-study, 29% gained from their friends and neighbours and 20% and 10% obtained experience from NGOs and DoF respectively. Rahman (2003) stated in his study in Gazipur district that about 49% farmers gained fish farming experience from Mymensingh Aquaculture Extension Project (MAEP) and DoF.

Forty two percent of the total farmers received training while the rest 58% did not get any type of training (Table 6). Ahmed (2003) observed in his study that 57.7% farmers received the formal training. Rahman (2003) reported that about 49% farmers received formal training.

Most of the farmers belonged to the age group of 21-40 years. Kaiya *et al.* (1987) also stated that fish culture efficiency varied with the age and number of owners of pond which showed the similarity with the group. Rana (1996) reported the age group 18-45 years which agreed with the present findings. The average family size was 6.93 members for all locations. The average family size of Bangladesh is 4.89 (BBS, 2004). So, the studied family size was higher than the national average size of family. Masud (2000) also observed

that average family size of farmers was 6.36 members. Literacy rate of pond fish farmers was found higher than the national adult literacy level (BBS, 2004).

It was found that most of the farmers (40%) had tin shed house. More or less similar result also reported by Rana (1996) whereas, Ahmed (2002) found 62% of katcha housing structure of farmers in Mymensingh area. The study showed that most of the households (43%) were dependent on village doctors, although they got health service from the upazila health complex and MBBS doctors. Alam (2006) reported that only 42% of the farmers in Mithapuqur upazila under Rangpur district got the opportunities for medical care by MBBS doctor and Upazila health complex while the rest 58% were dependent on village doctor and others. The sanitary conditions of the fisher were very poor and most of them (48%) used semi pucca toilets (Table 12). Similar result also reported by Alam (2006). Most of the farmers in three respective unions had improved their livelihood conditions by fish farming. Ahmed (2002) also found that 71% farmers improved their socio-economic condition through prawn production which seems to be better in the study areas.

Technical, economic and social problems of fish farming were identified in the study areas. Habib *et al.* (1994) reported the similar problems of pond fish culture. Saha (2003) reported that theft of fish and poisoning of the pond water, lack of capital, and technical knowledge were the major problems in Dinajpur district. Necessary steps should be taken to overcome these problems to ensure the sustainable livelihood of the fisher.

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