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CONSTRAINTS AND PROSPECTS OF FISH FARMING IN LALMONIRHATDISTRICT

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Abstract

The present study was conducted to know the constraints and prospects of fish farming in Lalmonirhat district of Bangladesh. The data were collected from 100 fish farmers through questionnaire interview for a period of four months from July 2014 to October 2014. Most of the ponds were perennial (72%) with an average size of 0.41 ha and a depth of 1.69 m. All the fish farmers practiced mostly carp polyculture system using different aquaculture inputs like fertilizer, feed, seed, and chemicals. They were usually found to collect fish seed from neighboring districts, mainly Bogra and Mymensingh. The main constrains were availability of quality seed, lack of scientific and technical knowledge, lack of manpower, outbreak of fish diseases, lack of credit facilities, high price of various inputs, low fish price, theft of fish and poisoning the pond water. Though there were many constraints, the fish production from aquaculture sector was increasing gradually in the study area. The total fish production from aquaculture in 2014 was projected 10,663 MT, while the fish production in 2010 was only 7600.4 MT in Lalmonirhat district. If the constraints could be solved, fish production in the study area would possibly be increased tremendously.

Key words: Fish Farming, Lalmonirhat District, Bangladesh, Polyculture, Cage Culture.

Introduction

Aquaculture is commonly regarded as part of the cultural heritage in Bangladesh. As a riverine country, it is rich in freshwater resources that are suitable for aquaculture. Bangladeshi people are mostly depended on fish and aquatic production for their animal protein and micronutrient needs. More than 60 percent of animal protein supply comes from fish (DoF, 2014).The country encompass productive water resources in the form of ponds, low-lying natural depressions or haors and beels, oxbow lakes, canals, rivers, estuaries and marine water areas which are the habitat of many commercially important fish species of Bangladesh. Since time immemorial, these fishes are considered as an integral part of the nation providing food, nutrition, incomes, livelihoods and export earnings (Alam 2005; Nasir Uddin *et al*., 2003; Dey *et al*., 2010; Jahan *et al*., 2010 and Belton *et al.*, 2011). The fisheries sector (marine and inland fisheries) plays a vital role in the country's economy, contributing 4.37% of gross domestic product, 23.37% of Agriculture and 2.01% of export earnings (DoF 2014). Bangladesh ranked as the 4th largest global aquaculture producer country in 2012 after China, India, Vietnam and Indonesia (FAO 2014). A variety of types of fish culture, both land and water based, have been developed in the country over the past 20 years which include pond aquaculture (mostly semi intensive), rice-fish culture, pen culture, shrimp gher (enclosure) farming, community based fisheries, cage culture, *etc*. (Edwards 2000). Now, Aquaculture in Bangladesh is growing rapidly. Over the years, aquaculture has grown significantly as an industry. The number of potential fish farmers and beneficiaries is considered to be very large in Bangladesh (Dey *et al*., 2008). Because of its high potential, promotion of aquaculture has been identified as an important sub-sector of food security, poverty alleviation, rural employment and economic emancipation in the development programme of the Bangladesh and more than 4 million households (20 million family members) livelihoods directly depend on aquaculture in Bangladesh (Belton *et al*., 2011). While aquaculture has been progressing very well due to development of various technologies, but some of the constraints have halted the speed of the progress, which need to be seriously addressed and mitigate to maintain the current growth of the aquaculture industry. Important constraints identified by previous studies are joint ownership of ponds, inadequate technical knowledge,

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high prices for feed and other inputs, the lack of quality fingerlings, poor understanding of economics, and inadequate credit options (Ahmed *et al*., 1994; Gupta and Rab 1994; Lewis 1997; Chowdhury and Maharajan 2001; Thomson *et al*., 2005; ADB 2005). Present study was conducted in Lalmonirhat district. Here fish farming has a positive impact on aquaculture production but numerous types of constraints affect potentiality of fish farming in the northwestern region of Bangladesh. Low water flow from upstream river, lack of loan facilities, low quality and scarcity of fish seeds in proper time were the main barrier of fish farming in the study areas. Due to seasonal ponds, most of them have converted their ponds into crop's fields. Ali and Rahman (1986) stated that a sandy soil of the ponds was a major problem with 19% of the fish pond owners in Lalmonirhat district who stated that this problem mainly occurred due to Farakka Barrage of India. Rahman (2003) stated that the major constraints of carp farming were lack of money and production cost. Khan *et al*., (1998) also identified that the lack of knowledge about fish culture was one of the most important problems. Hossain *et al*., (1992) observed that the largest problems faced by fish farmers are multiple ownerships. Besides this, Northwest Fisheries Extension Project-2010 (NFEP-II) shows, average 37.5% of farmers were identified lack of money, 30% of higher production cost, and 17.5% of low quality seeds and lack of technical assistants in Rangpur, Lalmanirhat, Dinajpur, Panchagar, Thakurgoan, Gaibanda, Kurigram and Nilphamary districts. The main objectives of present study were to know the present status,constraints andprospects of fish farming in Lalmonirhat district.

Materials and Methods

Study Area and Periods

Five upazilas of Lalmonirhat district were selected namely LalmonirhatSadar, Aditmari, Hatibandha, Kaligonj and Patgramto conduct the present study. The data were collected for a period of four months from July 2014 to October 2014 (Figure 1).

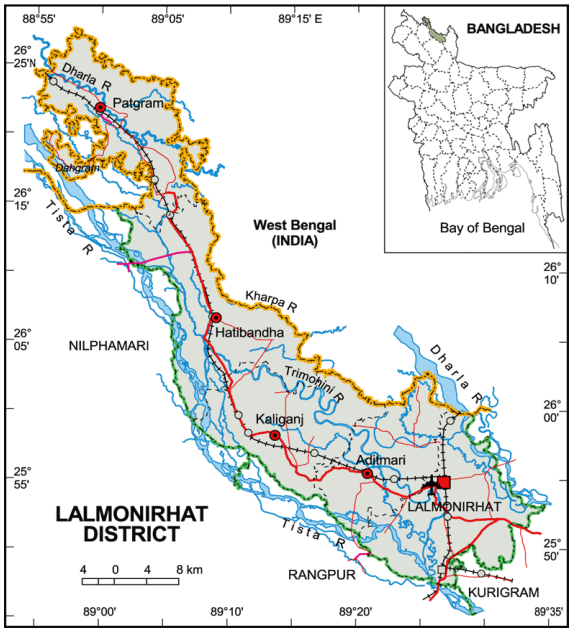

Figure 1. Map of Lalmonirhat district

Selection of Sample Farmers

Almost 100 fish farmers were randomly selected for questionnaire interviews, where, each upazila consist 20 fish farmers. Equal size of sample was selected from each upazila to get the more accuracy of data.

Collection of Data

Data were collected through direct interview. With a set of interview schedule designed for this study, each respondent was given a brief introduction about the nature and purpose the study during the interview.

Processing and Analysis of Data

The collected data were scrutinized and summarized carefully before the actual tabulation. Some of the data were collected into local units and those data were converted into international units. After data entry, the data were analyzed with computer programs, Microsoft Excel.

Results and Discussion

Farmers Profile

Educational status

Five categories of fish farmer were found in the present study regarding their education levels. In an average, the highest number (44.0%) of fish farm owners had class VI-X level education followed by class I-VI (35%), SSC (9%) and HSC (9%) graduate (3%) (Figure2). The reported this highest rate also found lower than the national adult literacy level of 57.9 % (BBS 2010). Ali *et al.* (2014); Asif *et al*. (2014); Asif *et al*. (2015); Islam *et al*. (2014); Islam *et al*. (2015) and Sharif *et al*. (2015) conducted the same research on education status of farmer and had got more or less similar result with present study.

Age structure

Knowledge of the age structure of fish farmers is important in estimating potential productive human resources. In the study area, overall 5% farmer were 26-30 years, 30% farmers were 31-35 years old, 31% were between 36-40, 18% were between 41-45 years old and 10% were 46-50 and 6% were more

than 50 years old. The highest percentage farmer was found in this area was in 36-40 years age group (Figure 3). The similar result was found by Ali *et al*., (2014); Asif *et al*. (2014); Asif *et al*. (2015); Islam *et al*. (2014); Islam *et al*. (2015) and Sharif *et al*. (2015).

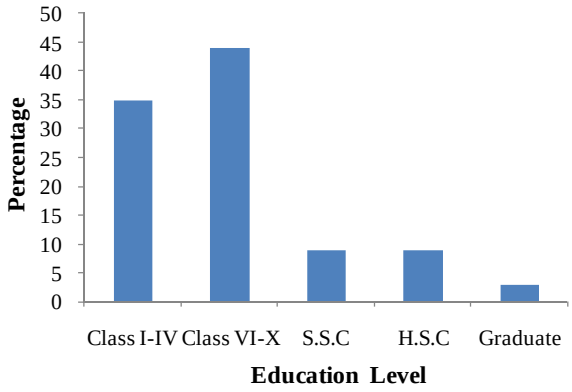

Figure 2. Education level of fish farmers

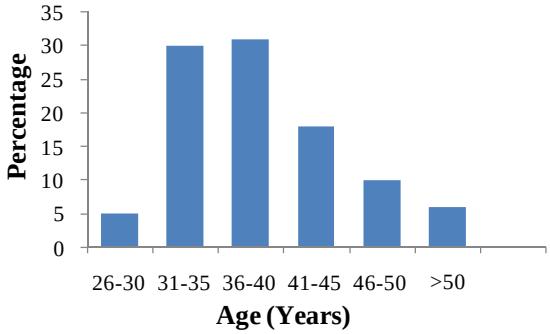

Figure 3. Age structure of farmers in the study area

Income sources of farm owners

In the study area, aquaculture was not found as the main income source for the majority of farm owners. Most of the farm owners reported agriculture to be their principal occupation. Apart from agriculture and aquaculture, farmers were found to engage other income generating activities including their own business, services and other activities. Average income from aquaculture was Tk. 241114.64/year fish farmers (Figure 4). Khan (1986); BBS (2002); Asif *et al*., (2014); Asif *et al*., (2015); Islam *et al*., (2014); Islam *et al*., (2015) and Sharif *et al*., (2015) found the more or less similar result with the present study.

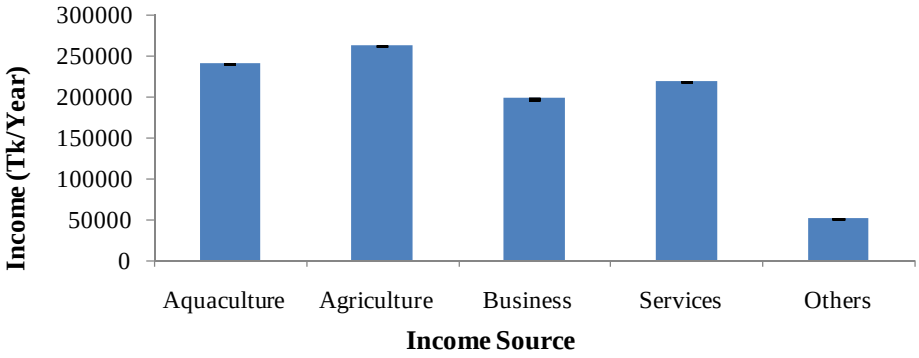

Figure 4. Income generating activities of farm owners

Land types

Three categories of lands were found by the farmers which included homestead area, agricultural land and fish pond. They had average 0.13462 ha of homestead area, 1.448675 ha of agricultural land and 0.53078 ha of fish pond (Table 1).

Table 1. Land types of farmers (ha)

Upazila	Homestead area	Agricultural land	Fish pond
Sadar (n=20)	0.1848±0.177	0.2398 ±0.158	0.2811 ±0.014
Aditmari(n=20)	0.1202±0.031	0. 9977±0.421	0.5701 ±0.041
Hatibandha(n=20)	0.1525±0.104	2.1499 ±1.010	0.4118 ±0.061
Kaligonj(n=20)	0.1151±0.017	1.9149 ±1.001	0.7108 ±0.644
Patgram(n=20)	0.1005±0.021	1.4901 ±1.201	0.6801 ±0.444
Overall average	0.13462±0.070	1.448675±0.758	0.53078±0.241

Technical knowledge of fish farmer

Most of the farmers in the present study did not receive required training for fish culture and practiced traditional culture system and of only average 52% of the respondent had necessary technical knowledge on improved fish farming practices gained either from NGOs, ATI, DoF, JuboUnnayon and from others (Table 2). Rahman (2003) found in his study in Gazipur district that about 49% farmers gained fish farming experience from friends and neighbor. Saha (2006) observed in his study that about 45.6% Pangus farmers gained experience from friends and neighbors. In recent years, Department of Fisheries (DoF), NGOs such as Bangladesh Rural Advancement Committee (BRAC), Rangpur-Dinajpur Rural

Development Services (RDRS), Association for Social Advancement (ASA) and United States Agency for International Development (USAID) and other institutes have been provided training to the fish farmers.

Table 2. Technical knowledge of fish farmers

Upazila	NGOs	ATI	DoF	JuboUnnayon	Other	No
Sadar (n=20)	3(15%)	2(10%)	1(5%)	1(5%)	1(5%)	12(60%)
Aditmari(n=20)	2(10%)	1(5%)	0(0%)	3(15%)	3(15%)	11(55%)
Hatibandha(n=20)	3 (15%)	1(5%)	1(5%)	3 (15%)	4(20%)	8(40%)
Kaligonj(n=20)	2(10%)	2(10%)	0(0%)	3(15%)	1(5%)	12(60%)
Patgram(n=20)	5(25%)	3(15%)	2(10%)	3(15%)	2(10%)	5(25%)
Overall average (n=100)	15%	9%	4%	13%	11%	48%
Technical knowledge: Yes (52%) and No (48%)						

n= Sample size; Figure in the parentheses indicate percentage

Infrastructure Facilities of Fish Farms

It was observed that about 88% farms had easy access by road. About 63% farms had their own electricity facility and 19% farmers had their own farm house (Figure 5).

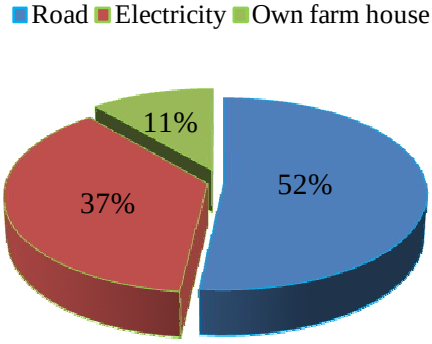

Figure 5: Infrastructure facilities of fish farms

Ownership and Area of Ponds

Ownership of pond is an essential factor making smooth decision regarding of fish farming. A pond having single ownership is very easy to monitor but it is very tough in the case of multiple ownership. Three types of pond ownership were observed which included farmers own pond (55%), leased (10%) and multi ownership (35%) (Figure 6). The average area of pond was 0.41 hectare and a depth of 1.69 meter.

Pond Depth

Pond size and depth is an important factor for fish culture because all management measures are planned considering the size and depth of ponds. The management of small size pond is easier than large size pond. The farmers can easily manage their pond during culture as well as harvesting. The average area of pond was 0.41 hectare and a depth of 1.69 meter. The area and depth of the ponds seems suitable for fish culture (Table 3). Majority (85%) ponds were perennial and only 15% were seasonal found in the study area. Farmers used deep tube-well as water source for fish culture during dry season. The majority of the ponds (75.56%) had no water inlet and outlet system.

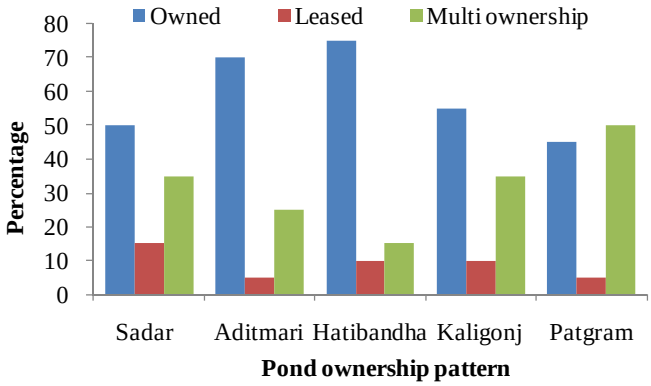

Figure 6. Average percentage of pond ownerships

Table 3. Average area and depth of pond in the study area

Pond description	Sadar (n=20)	Aditmari (n=20)	Hatibandha (n=20)	Kaligonj (n=20)	Patgram (n=20)	Overall Average
Average pond area (ha.)	0.420	0.452	0.390	0.419	0.370	0.410
Average pond depth (m)	1.61	1.78	1.70	1.56	1.80	1.690

Soil Type of Pond

From the study, it was found that overall 77.5% of pond had clay type soil and 22.5% had sandy loam soil (Table 4). In the present study, it was found that majority of the area of pond had covered clay soil and only few had sandy loam type soil. In loamy soil area, ponds have high capacity of water holding with less turbidity problem and high productivity that is potential for other land based aquaculture systems. Ali and Rahman (1986) stated that sandy soil of the ponds was a major problem of the fish pond owners in Lalmonirhat district.

Table 4. Soil type of the farm (%)

Soil Type	Sadar (n=20)	Aditmari (n=20)	Hatibandha (n=20)	Kaligonj (n=20)	Patgram (n=20)	Overall Average
Clay-loam	8(40%)	7(35%)	5(25%)	8(40%)	7(35%)	35%
Loam	2(10%)	1(5%)	3(15%)	2(10%)	5(25%)	13%
Sandy	2(10%)	3(15%)	4(20%)	6(30%)	2(10%)	17%
Sandy-loam	7(35%)	8(40%)	5(25%)	2(10%)	3(15%)	25%
Sandy-clay	1(5%)	1(5%)	3(15%)	2(10%)	3(15%)	10%

n= Sample size; Figure in the parentheses indicate percentage

Labor Cost

Aquaculture labor was found very cheap (average Tk. 220/day) in the study area. It was Tk. 180/day in Kaligonj and Tk. 260/day in sadarupazila. However the labor cost is increasing now a day in the study area in comparing with other kinds of labor. Increase of labor cost is directly related with the increase of aquaculture production cost.

Fish Culture Strategy

Maximum farmers practiced four to seven fish species carp polyculture in their ponds. The most common fish species used for polyculture system were Rohu (*Labeo rohita*), Catla (*Catlacatla*), Mrigal (*Cirrhinuscirrhosus*), Silver carp (*Hypophthalmichthysmolitrix*), Grass carp (*Ctenopharyngodonidella)*, Carpio (*Cyprinuscarpio*), Bighead carp (*Hypophthalmichthysnobilis*), Sarpunti (*Barbodesgonionotus*), Bata (*Labeobata*), Pangus (*Pangasiuspangasius*) and Tilapia (*Oreochromisniloticus*). Islam (2005) worked on pond fish farming in Dinajpur district and found that same species were used for polyculture which akin with the present findings.

Sources of farm water

Farmers used both surface and underground water for culturing fish. In the dry season, most of the farmers used underground water pumping through deep tube well. They had to spend average Tk. 8353.12/year for pumping water in pond. They have a little bit chance of exchanging of water from their farm, and farmer use it if sudden fall of water quality occur in the farm. There are no enough drainage facilities and pump facilities for exchanging water in the study area and it also costly for farmer.

Collection and price of fish fry

In the study area, the season of fish farming started from April and continued until December. Fish fries were stocked generally when they become available in April to June and harvested primarily during December to January. Farmers had to collect fish fry from different hatcheries from Bogra and Mymensingh. The price of fry and fingerling in sadar upazila was Tk. 3050/kg and Tk. 3900/kg respectively and was Tk. 2700/kg and Tk. 3600/kg respectively in Patgram upazila. The average cost of per kg fry was Tk. 3475 and fingerling it was take Tk. 3150. The similar result was found by Asif *et al*., (2014) and Sharif *et al*., (2015).

Fish feed

Farmers used both homemade and commercial feed in the ponds. They usually prepared homemade feed by mixing wheat bran, rice bran, and mustard oil cake which cost about Tk. 23.00/kg. The price of commercial feed was varied from Tk. 38.4-60.4/kg. Some feed companies were found to supply fish feed in the study area. Variations were observed in the price of feeds of different companies (Table 5). CP Company showed the highest price for feed than other company, because they ensure the good quality feed with minimum mortality. Respondent also informed that, CP Company fish feed had a good demand in the study area.

Table 5. Cost of commercial fish feed (Tk/Kg) in the study area

Name of feed company	Sadar	Aditmari	Hatibandha	Kaligonj	Patgram	Average
Local fish feed	38	35	33	36	37	35.8
ACI fish feed	55	56	56	55	50	54.4
Aftab fish feed	46	47	45	46	47	46.2
CP fish feed	60	60	61	61	60	60.4
Mega fish feed	40	42	41	42	43	41.6
Nourish fish feed	40	43	42	41	42	41.6
Paragon fish feed	42	40	41	44	42	41.8
Quality fish feed	45	45	45	44	45	44.8
Ruposhi fish feed	39	36	39	38	40	38.4

Use of fertilizers

Farmers used both organic and inorganic fertilizers in their ponds. For organic fertilizer they used cow dung (1000±12.1 kg/ha) and poultry excreta (1450±14.6 kg/ha). For inorganic fertilizer they used urea (62.6±1.2 kg/ha), TSP (64±1.9 kg/ha) and MP (71.2±2.1 kg/ha). They also used lime (246.8±7.4 kg/ha) for different purposes (Table 6). Shahab *et al.*, (1987) worked on effect of inorganic fertilizer and found 74 kg/ha TSP and urea respectively was more economic for monoculture of Rohu fish, which is more or less similar with the present findings.

Table 6. Use of fertilizers (Kg/ha) and lime in the study area

Upazila	Organic fertilizer		Inorganic fertilizer			Lime
	Cow dung	Poultry litter	Urea	TSP	MP	
Sadar	1000±10.7	1750±19.5	62±1.22	64±2.0	70±2.3	243±8.1
Aditmari	900±13.2	1450±11.5	60±1.50	65±1.7	73±2.7	230±7.0
Hatibandha	1000±10.0	1500±17.3	63±0.98	63±1.2	71±2.1	251±9.2
Kaligonj	900±14.4	1400±13.4	65±1.17	65±2.1	72±1.6	260±5.6
Patgram	1200±12.0	1550±11.1	63±0.99	63±2.3	70±1.8	250±7.1
Average	1000±12.1	1450±14.6	62.6±1.2	64±1.9	71.2±2.1	246.8±7.4

Chemicals and drugs

Chemicals and drugs were not widely used in the study area. Only 42% farmers used different type of chemicals for disinfection and disease treatment (Table 7).

Table 7. Use of chemicals in the study area

Use of Chemical	Sadar (n=20)	Aditmari (n=20)	Hatibandha (n=20)	Kaligonj (n=20)	Patgram (n=20)	Average
Yes	07 (35%)	09 (45%)	5(25%)	9(45%)	12(60%)	42%
No	13 (65%)	11 (55%)	15(75%)	11(55%)	8(40%)	58%

n= Sample size; Figure in the parentheses indicate percentage

Stocking density and production

Farmers used high stocking density in their pond as they thought higher density of fish give higher production. The average stocking density in the study area was found to be 93832.40 fry/ha. The stocking density was higher in Hatibandha (113410 fry/ha) than in Sadar (105298 fry/ha). It seems the stocking density is much higher than normal practices about 5900-9880 fry/ha (DoF, 2005). Hasanuzzaman (1997) observed the average stocking density of 16,196 fry/ha in the district of Rajshahi. NFEP-II (1998) suggested that the stocking density of carp polyculture was optimum at the rate of 14,820 fry/ha. It was found that the average annual yield of fish was 3512.326 kg/ha. The average fish production per hectare pond was higher in Hatibandha 4070.13 kg/ha than in Sadar 4003.18 Kg/ha (Table 8). DoF (2005) reported that the national production can be obtained at 4092.86 kg/ha/yr. The carp polyculture production was highest in Mymensingh district which was estimated at 11690.51 kg/ha respectively. Therefore, the production of the study area was lower than the production of Mymensingh and overall average production of country.

Table 8. Stocking density and production of fish in farms

	Sadar	Aditmari	Hatibandha	Kaligonj	Patgram	Average
Stocking density (Fry/ha)	105298± 3702.87	81522± 3759.12	113410± 3730.99	75522± 7795.12	93410± 1330.90	93832.4±4063.8
Production (Kg/ha/yr.)	4003.18± 113.38	3047.08± 771.24	4070.13± 942.31	3271.11± 1020.33	3170.13± 822.31	3512.326±733.914

Harvesting

Although fishes were reported to harvest throughout the year, the pick season of harvesting period was found from December to January. In the pick season, around 70% used of the stocked fishes were reported to be harvested. Farmers harvested their fish using cast net and seine net locally known as *berjal* for harvesting fishes. Total 80% of the fishes were sold by the farmers to local market and the rest 20% consumed by the households and given to the relatives. It was found that 58% of the farmers hired labor for harvesting their fish.

Marketing system

In the study area, marketing facility was found very poor which including lack of improved infrastructure, unavailability of ice for fish preservation, unavailability of fish market place, lack of transport facility. In these marketing channel, a number of middlemen existed like local agents, whole

sellers, local fish traders and retailers. Market communication is normally being made through middlemen. It was observed that a few pond fish farmer directly sold their fish to local paikers or local agents at the bank of the ponds and majority of the farmers brought their fish in local markets and sold them directly to local paikers or consumers. The finding of Khanam *et al.*, (2003) was more or less similar with findings of the present study. Asif *et al*., (2014); Islam *et al*., (2014); and Sharif *et al*., (2015) found the more or less similar marketing system.

Constraints of Aquaculture in Lalmonirhat District

Ownership problems

A few farmers (32%) reported multiple ownership of the culture pond as a problem in the study areas and they were trying to avoid this problem by leasing out the pond.

Manpower problems

A total of 32% farmers mentioned unavailability of labor as problems in the study area for fish farming while 83% respondent mentioned lack of trained manpower was another constrain for aquaculture development in the study area. Khan *et al*., (1991) identified that the lack of fish culture knowledge was one of the most important problem for fish farming. Farmers mentioned unavailability of labor as a problem and also mentioned lack of fisheries expert person‘s in the study area.

Input problems

Lack of quality fish seeds was reported by 32% farmers which resulted in low growth and high mortality of fishes. Majority of them (73%) reported unavailability of seeds in peak season causes delay in starting culture. Most of the farmers (76%) reported high price and 25% farmers reported unavailability of commercial feed in the study area. Lack of quality fish seeds was reported by farmers due to unavailability of established quality fish hatchery in the study area. So far farmers have to collect quality seed from surrounding districts, which leads high mortality of seeds during transportation. It also increase the overall production cost of the farmer. Ali and Rahman (1986) stated that the non-availability of good quality fingerlings was the major problem in Lalmonirhat district. Unavailability of fish hatchery was the main crisis of fish seed and they had to import fish fry from far distance such as Bogra and Mymensingh resulting to increase the price of fish seeds.

Financial problems

About 56% failed to apply required inputs like fertilizers, quality seed fry and feeds in time due to lack of money. In this case, loan from the bank or other organizations may be an alternative. Most of the farmers (42%) reported that if they want to get loan from NGOs, they have to give higher interests. They faced difficulties in getting loan from government banks.

Lack of scientific and technical knowledge

A total of 82.00% farmers in the study area were not aware about the modern fish farming technology. They were not getting enough technical supports from relevant government or non-government organizations and they had to discuss with neighboring farmers to solve their problems. Total 83.00% farmers reported the lack of experienced manpower in the study area that supported the modern fish farming technology.

Water quality problems

About 83% farmers reported that their stock grasped at the water column due to lack of sufficient dissolved oxygen (DO) level in pond water. While facing this problem, the farmers followed traditional methods to increase DO level, like swimming in pond to agitate water, movement of water using bamboo pool etc. Plankton bloom was recorded in 73% farmer‘s fish ponds. Over fertilization of pond, especially with organic fertilizers was responsible for this problem. Farmers used huge amount of poultry litter and cow dung as inorganic fertilizer for fish which create algal blooms in the cultured pond.

Social problems

Fish poaching was a severe problem in the study areas and 79% farmers have been victimized by this problem. To overcome this problem, farmers placed bamboo or tree branches into the pond water. Security guards have also been employed in some cases too. Sometime 23% farmers were the victim of fish poisoning. This was an important risk of aquaculture in the study areas. Similar findings were also reported by Alam (2005) and Islam and Dewan (1986).

Fish disease

All farmers mentioned a number of diseases in their farmed fishes. The most prevalent disease as reported by the farmers included epizootic ulcerative syndrome (65%), fin rot (57%) and tail rot (83%). Hemorrhagic

lesion over body surface (60%), dropsy (9%), gill rot (31%), malnutrition (25%) and Argulosis (10%) have also been reported (Figure 7). Faruk *et al*., (2008) mentioned that the common diseases of freshwater fishes of Bangladesh were tail and fin rot, bacterial gill rot, dropsy, various types of fungal diseases, protozoan diseases, parasitic diseases, nutritional disease, and various tumors. Brown and Brooks (2002) mentioned that in their study farmers were capable of identifying at most nine major causes of fish death in their ponds. Faruk *et al*., *(*2004) reported that financial loss due to disease in rural aquaculture was about 14% of actual plankton.

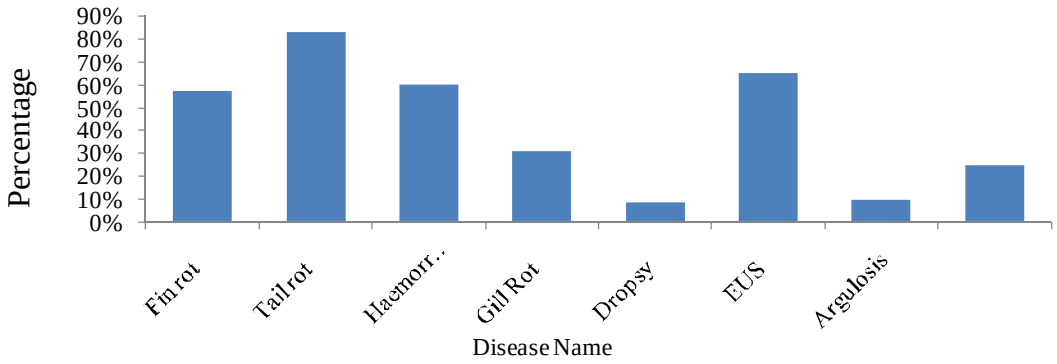

Figure 7. Average (%) diseases in aquaculture in the study area

Overall Problems

The overall problems of aquaculture in Lalmonirhat district is shown in figure 8.

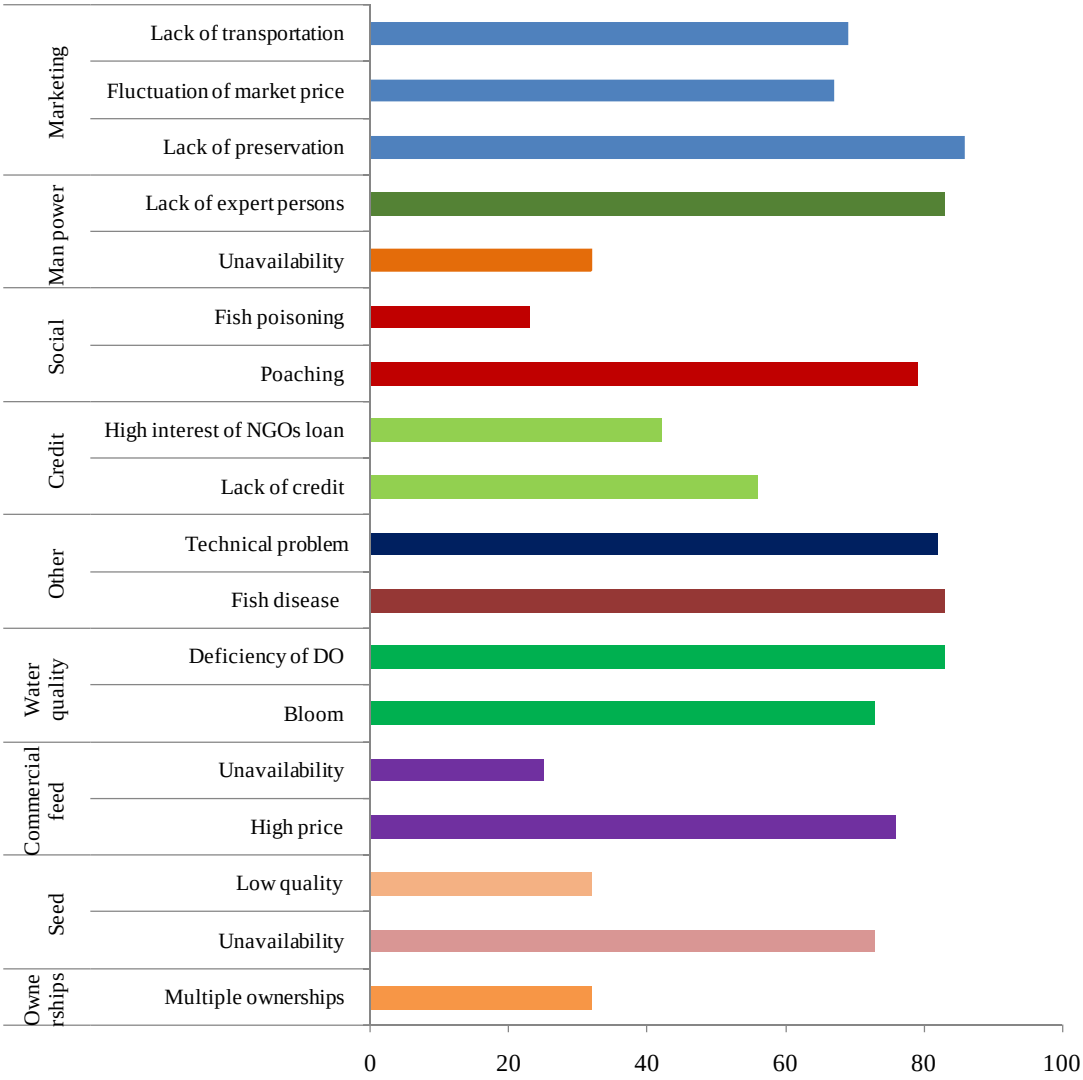

Figure 8. Constraints of aquaculture in the study area

Prospects of Fish Farming in Lalmonirhat District

Fish production is increasing from the aquaculture sector in Lalmonirhat district. The total fish production from aquaculture in the study area was 7600.4 MT in 2010 and which is projected as 10663 MT in 2014 in Lalmonirhat district (Figure 9). This indicates that there is a bright future of fish production in the study area.

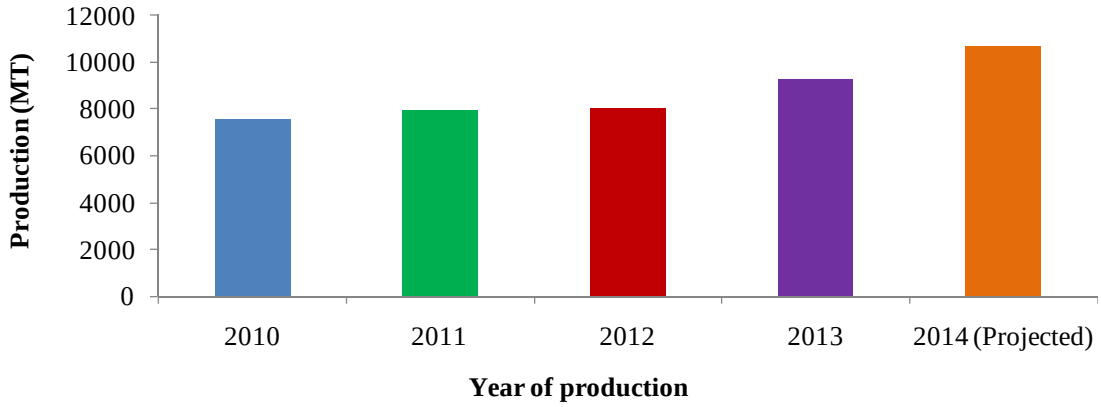

Figure 9. Aquaculture production of Lalmonirhat district in last five years

Conclusions

The present study was explored some major constraints encountered by the farmers as well as prospect of aquaculture in Lalmonirhat district. The problems faced by the farmers were lack of scientific and technical knowledge, lack of manpower, outbreak of fish diseases, lack of credit facilities, high price of various inputs, low product price and lack of marketing facilities, theft of fish and poisoning the pond water. The constraints discussed above are quite common in fish farming in Bangladesh. To overcome these problems some suggestions could be made which include giving credit to fish farmers, arrangement of pump during dry season and some basic training of fish health management.

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