



Impact of progressive shrimp farming on farmer's livelihood in southwestern region of Bangladesh

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ABSTRACT

An informative study was carried out on 30 shrimp farmers of Shyamnagar upazilla in Satkhira district, situated in the southwestern coastal region of Bangladesh. The study was conducted to evaluate the livelihood analysis of the farmers based on progressive shrimp farming. The findings showed that majority of the respondents (56.67%) were dependent on shrimp farming and others involved in some subsidiary occupations like business, agriculture, service etc. The annual incomes of major shrimp farmers (56.67%) were 50,000-2,00,000 BDT, 23.33% were 2,01,000-5,00,000 BDT and rest 20% were 5,01,000- 20,00,000 BDT, respectively. The findings revealed that livelihoods of all farmers in the study area had improved by practicing extensive shrimp farming. Most of them uplifted their living status by ensuring some housing (50%), drinking (90%), electricity (73.33%), sanitary (56.67%), medical (100%) and banking (73.33%) facilities. In addition, majorities of them also increased their expenses on children's education (80%), health management (56.67%), and purchasing entertainment equipment (63.33%). In contrast, the expenses on buying cattle or other animals decreased (56.67%) showing their livelihood mainly depends on shrimp farming.

INTRODUCTION

Although Bangladesh has excellent fish and shrimp culture potentiality due to abundant water resources, shrimp culture is expected to continue to play an important role in ensuring food security and poverty alleviation, particularly for the rural poor. Shrimp farming has emerged as a major industry and becomes one of the major export items in Bangladesh. To fulfill the extended export demand, shrimp culture has been promoted with the increase of shrimp farm area which results in the concomitant increase of shrimp farm production.

Shrimp farming in the south and southeastern coastal belt of Bangladesh began in the early 1970s (DOF, 2012). The southwest Bangladesh having a

high population density tends to be resource poor, income poor and vulnerable to environment, climate and economic variability (Bundell and Maybin, 1996; Muir, 2003). Shrimp farming therefore creates prospects for increased income and sustainable livelihoods for farmers. The leading shrimp farming areas of Bangladesh are the Bagerhat, Khulna and Satkhira Districts in the southwestern region, Cox's Bazaar District in the south-eastern region and, to some extent, Pirojpur District in the south-central region. Experts and fisheries resource planners predict that all leading shrimp areas are unlikely to experience similar expansions. However, Satkhira District has the greatest potential for expansion of shrimp farming in the southwestern region where a large number of

farmers are involved in this sector for their livelihoods (Ahmed et al., 2008).

A number of studies have been conducted on shrimp farming in Bangladesh, including, shrimp farming practices (Bari, 2004), technical efficiency of shrimp farming (Begum et al., 2015), shrimp culture in Bangladesh with social and economic status (Alauddin and Hamid, 1999), economic analysis of shrimp farming (Alam et al., 2007) etc. However, there is a lack of studies on the changing pattern of livelihoods of shrimp farmers due to progressive shrimp farming, which may reveal the economics of Bangladesh. Therefore, this study was conducted to evaluate the livelihood analysis of the farmers based on potential shrimp farming in the Southwestern region of Bangladesh.

MATERIALS AND METHODS

The study was carried out in the Satkhira district, a coastal area of the Bay of Bengal, situated in the southwest part of Bangladesh from May to June, 2015. Among seven upazillas of Satkhira district, Shyamnagar upazilla were selected for data collection. All data were collected by questionnaire interviewing of 30 shrimp farmers from the selected six unions of Shyamnagar upazilla at satkhira district. Farmers were selected for questionnaire interview through random sampling and Participatory Rural Appraisal (PRA) tools like Large Group Discussion (LGD), Focus Group Discussion (FGD) and Cross-Check interviews with Key Information (KI). Besides primary information study, secondary data were collected from Department of Fisheries (DOF), Export Promotion Bureau (EPB), relevant journals, thesis, reports and official records.

The collected data were coded, summarized and processed for analysis. The analysis of collected data were mainly based on tabular description technique and verified to eliminate all possible errors and inconsistencies. Tabular technique was applied for the analysis of data by using Microsoft Excel through computer. The entire data collection method is presented through the following flow-chart.

RESULTS AND DISCUSSION

Shrimp farming sector offers diverse livelihood opportunities for the rural poor in Bangladesh. With the progress of shrimp farming technology and its practice in Southwestern region of Bangladesh, living status of the shrimp farmers is also improving day by day. In addition, all shrimp farmers in the study area strongly supported that their socio-economic condition had been improved by shrimp farming. Das (1990) also reported that the rapid expansion of shrimp culture changed the socio-economic structures of the farmers.

Age structure and family size

Age is very important in determining the potential or active farmers. According to age, shrimp farmers were divided into three groups—young (20-35 years), middle aged (36-50 years) and old (>50 years). In the study area, 50% aged farmers were middle aged, 30% were young and 20% were old (Figure 1). On the other hand, their families were categorized into small family (1-4 persons), medium family (5-6 persons) and large family (> 6 persons). It was found that majorities (43.33%) were medium family, 36.67% were small family and the rest 20% belonged to large family (Figure 2).

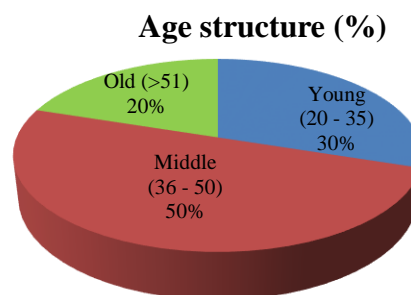


Figure 1
Age structure of shrimp farmers in study area.

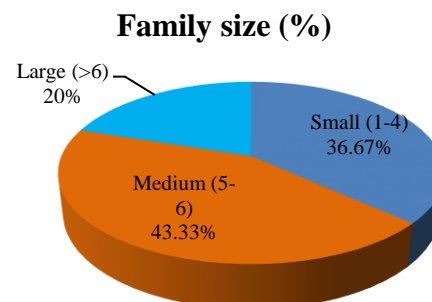


Figure 2
Family size of shrimp farmers in study area.
Educational and occupational Status

Most of the farmers had at least minimum level of education; 26.67% farmers passed primary level of education, 26.67% passed class eight, 26.67%, 13.33% and 3.33% farmers had SSC, HSC and graduate level of education respectively. In contrast, a very few farmers (3.33%) were completely illiterate (Figure 3). In addition, the occupation of all the people was mainly shrimp farming as Shyamnagar is shrimp-farming area. Besides shrimp farming, 16.67% were also involved in some subsidiary occupations, such as business (60%), agriculture (10%), service (6.67%) and other activities like cattle farming or day-laboring (6.67%) (Figure 4). The present findings agreed with Islam (2011) who reported that 80-90% farmers of Shyamnagar upazilla in Satkhira district were involved in shrimp farming.

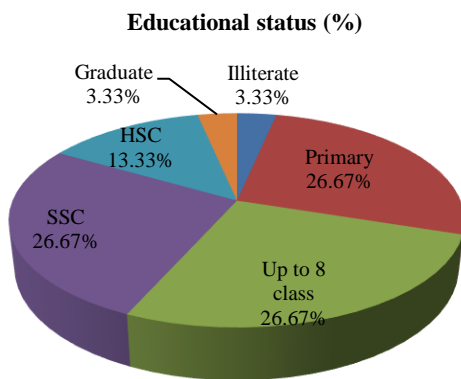


Figure 3
Educational status of shrimp farmers in study area.

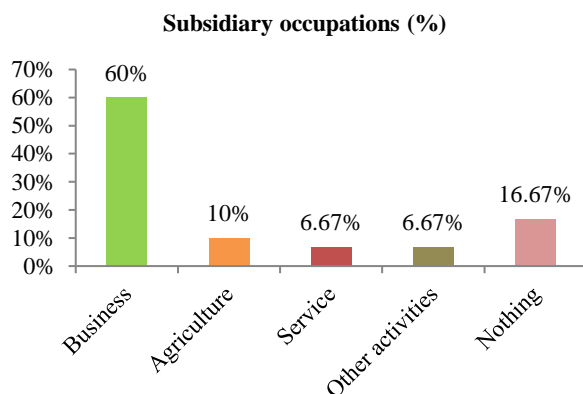


Figure 4
Subsidiary occupations of shrimp farmers beside shrimp culture in study area.
Annual income and housing condition

Annual income of the shrimp farmers were categorized into low income (50,000-2,00,000 BDT), medium income (2,01,000-5,00,000 BDT) and high income (5,01,000-20,00,000 BDT). Majority (56.67%) of the farmers got low income whereas, 23.33% and 20% farmers had medium and high income respectively (Figure 5). In addition, the majority (50%) of the respondents had constructed house, 23.33% had semi-constructed or half building and 26.67% had non-constructed house (Figure 6).

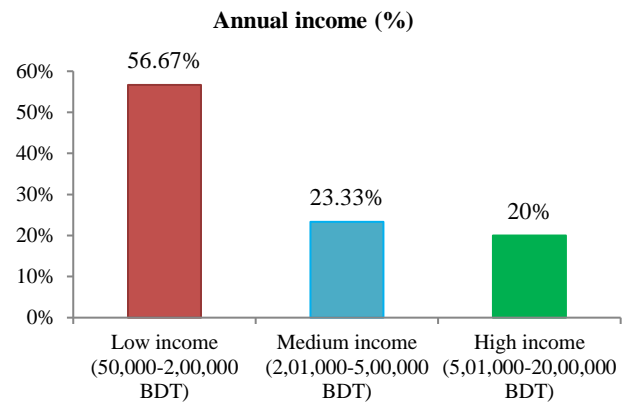


Figure 5
Annual income of shrimp farmers in study area.

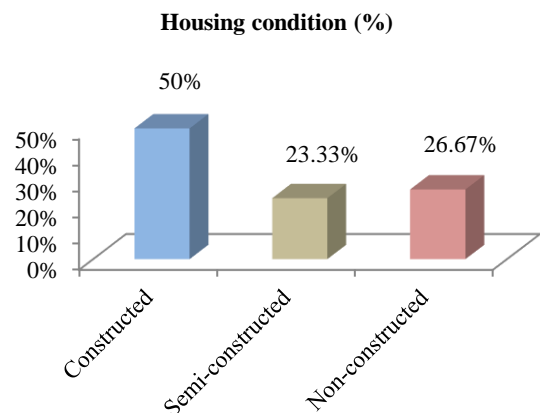


Figure 6
Housing condition of shrimp farmers in study area.

Drinking water and electricity facilities

In the study area, almost all (90%) farmers used tube-well water for drinking except 6.67% farmers used pond water and 3.33% used supply water (Figure 7). Besides, most (73.33%) of the farmers had electricity facilities whereas 26.67% farmers had no electricity facilities (Figure 8).

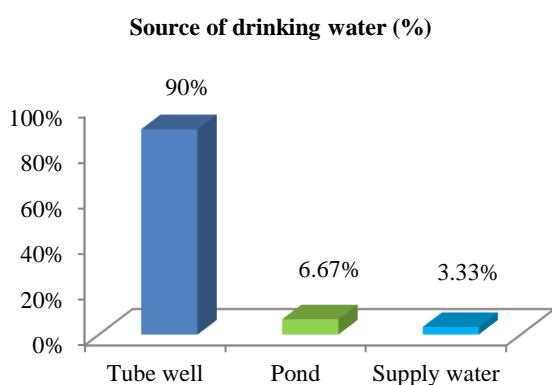


Figure 7
Source of drinking water of shrimp farmers in study area.

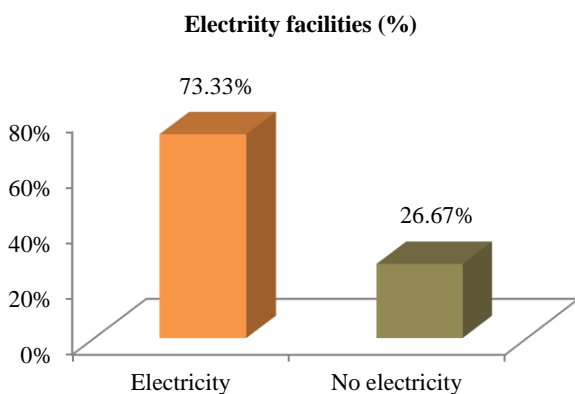


Figure 8
Electricity facilities of shrimp farmers in study area.

Sanitary, medical and banking account facilities

A higher percentage of farmers (56.67%) used constructed toilets, whereas other 23.33% and 20% farmers used semi-constructed and non-constructed toilets (Figure 9). Most of them (60%) were dependent on village doctor and others (40%) consulted with M.B.B.S. doctor (Figure 10).

Besides, 73.33% of the farmers had bank account from where they got facilities, especially in their emergencies. But some (26.67%) farmers didn't have any bank accounts (Figure 11).

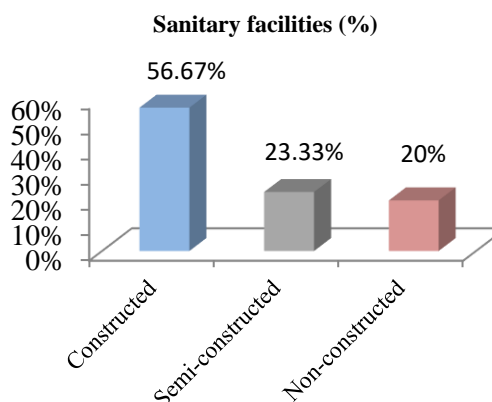


Figure 9
Sanitary facilities of shrimp farmers in study area.

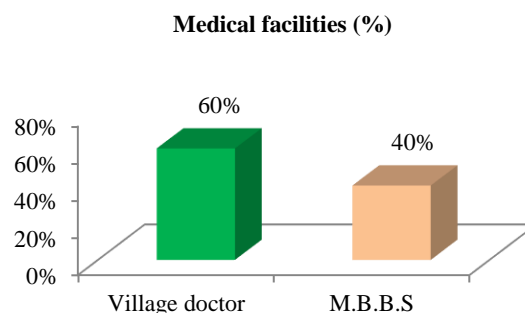


Figure 10
Medical facilities of shrimp farmers in study area.

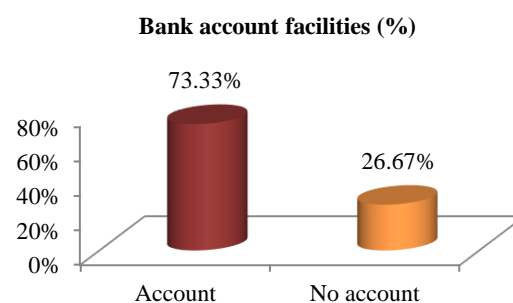


Figure 11
Bank account facilities of shrimp farmers in study area.

Status of increasing culture ponds

Most (53.33%) of the farmers observed that shrimp culture ponds were increasing day by day. But other 46.67% farmers gave their opinion at just opposite to it (Figure 12).

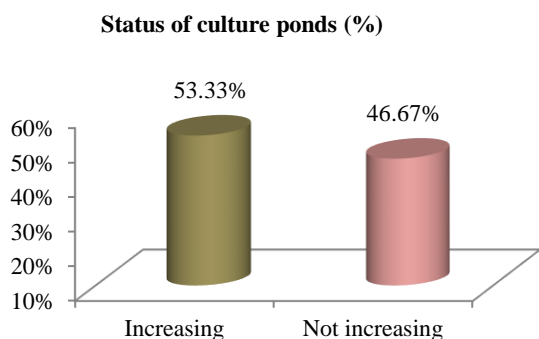


Figure 12
Status of increasing culture ponds in study area

Status of school going children and health management cost

Getting higher benefits from shrimp culture, most of the shrimp farmers became interested in their children’s education. In the study area, 80% farmers sent their children to school, but only 20% farmers were depriving their children of this opportunity (Figure 12). Besides, 56.67% farmers reported that their cost in health management was increased (Figure 13).

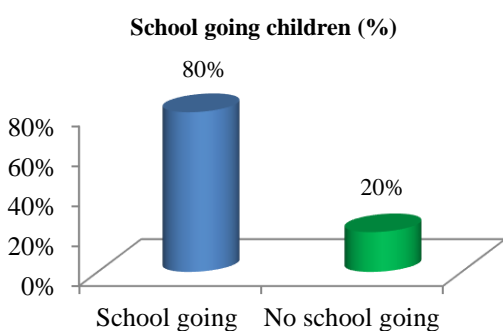


Figure 13
Status of school going children of shrimp farmers in study area.

Cost in health management (%)

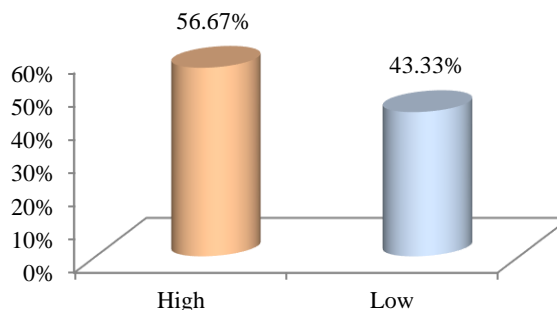


Figure 14
Status of cost in health management of shrimp farmers in study area.

Status of purchasing entertainment equipments and cattle or other animals

Due to practicing shrimp farming in Shyamnagar upazilla, shrimp farmers started to spend their money for recreational purpose. 63.33% farmers purchased different entertainment equipments such as – TV, VCD, DVD etc (Figure 15). On the contrary, 56.67% farmers had no interest in buying cattle or other animals as their main occupation related to shrimp culture (Figure 16).

Status of purchasing entertainment equipments (%)

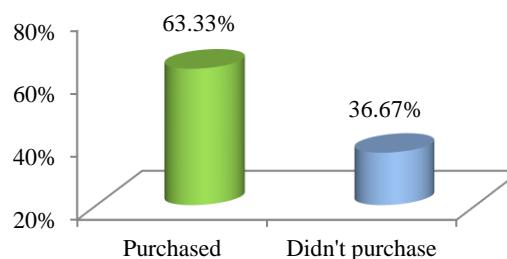


Figure 15
Status of purchasing entertainment equipments of shrimp farmers in study area.

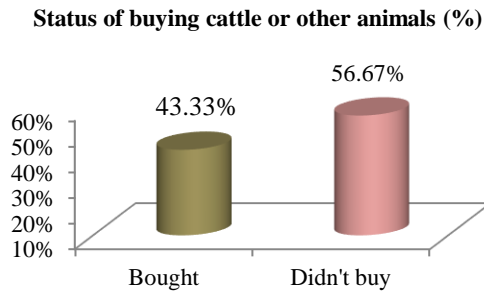


Figure 16
Status of buying cattle or other animals of shrimp farmers in study area.

CONCLUSION

Almost all farmers in the study area realized that shrimp culture was better than agriculture because maximum profit could be obtained by shrimp farming in minimum time and minimum cost although there were high risks in the culture system. They supported shrimp farming more because of higher availability of post-larval shrimp, lower feed cost, year round culture system, opportunity for self-employment etc. Majorities of the farmers have flourished their living status with improved housing, drinking, electricity, medical, banking and other facilities since continuing shrimp culture broadly. However, it is concluded that the southwestern region of Bangladesh is the nucleus of shrimp production of the country where most of the people earn their livelihoods through this sector and are uplifting their livelihood status gradually.

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