

ROLE OF WOMEN IN MUD CRAB (*Scylla* sp.) FATTENING IN THE SOUTHWEST PART OF BANGLADESH

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ABSTRACT

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Women's involvement in aquaculture is increasing. However, a little information about women is collected involve in mud crab farming in Bangladesh. The present study was conducted in three different areas; Khulna, Bagerhat and Satkhira in the southwest part of Bangladesh from February to August 2009 by using semi-structured and pre-tested interview schedule in order to assess the role of women in mud crab fattening. A total of 150 households from Khulna; Bagerhat; and Satkhira were randomly selected for better understanding of crab fattening. The findings revealed that among them only 74% women were directly involved through their participation with their families in mud crab farming in those study areas. However, in mud crab farming, the minority groups of rural women in Bangladesh are more liberated and are more advanced than the majority population of the Muslim women. A negative correlation between the age and net revenue was also found which implies that the younger people are more apt to try new innovations than the older one. The study recommended that effort should be made by different government and nongovernmental organizations for promoting the rural women in order to increase their participation in farming of this potential exportable species.

Key words: *women role, mud crab fattening, involvement*

INTRODUCTION

Women involvement in fisheries and aquaculture is an old practice in many Asian and African countries. From fish fry collection to grow-out production and management including on farm and on shore post-harvest management, marketing and processing of the fisheries products they are directly or indirectly involved (Kevane and Wydick, 1999; Shaleesha and Stanley, 2000; Sharma 2003; Song 1999). In China, Thailand and Philippines the high literacy rate and comparative liberal value system in society placed the skilled women as fish farmers, technicians, extension workers and professionals in various activities of fish production through aquaculture (FAO 1987). Meanwhile, in Bangladesh, only 3% of working women found to be involved in fisheries which is the second most important occupation in the non-farm sector (BBS 1996).

The movement of women in Bangladesh is constrained by different religious and socio-cultural boundaries; especially the rural women are expected not to move outside the homestead. This is the main factor for lower involvement of women in income earning activities compare to men (Barman 2001). However, the situations is changing now, they are involved in various agricultural activities in poultry, livestock and vegetable production (Hamid and Alauddin, 1998). The socio-cultural changes also shift their involvement from household based farming activities to labour intensive farming system (Shelly 2005). The government of Bangladesh is also emphasis on the economic advancement of woman and responsible for planning and implementing different women's development programmes and formulating gender-specific policies to empower. Different public and private sectors are also increasingly emphasizing the need for the greater involvement of women in this industry.

However, a little information about women is collected involve in crab farming. And yet, the most casual observation indicates that women play an integral role in mud crab farming in Bangladesh. Women are directly involving in mud crab fattening, sometime they are more likely to be referred to as helpers assisting their husband or other family members in feeding, stocking, and other pre and post-stocking management.

The study therefore, attempted to provide the understanding of the role of women in mud crab fattening with the following objectives:

- To explore the activities of the involved women in mud crab fattening with their socio-demographic characteristics.
- To observe the relationships between revenue in mud crab farming with some of their selected variables.

METHODOLOGY

Study area

A total of 150 households were selected for better understanding of mud crab fattening in three different areas; Khulna, Bagerhat and Satkhira in the southwest region of Bangladesh (Figure 1).

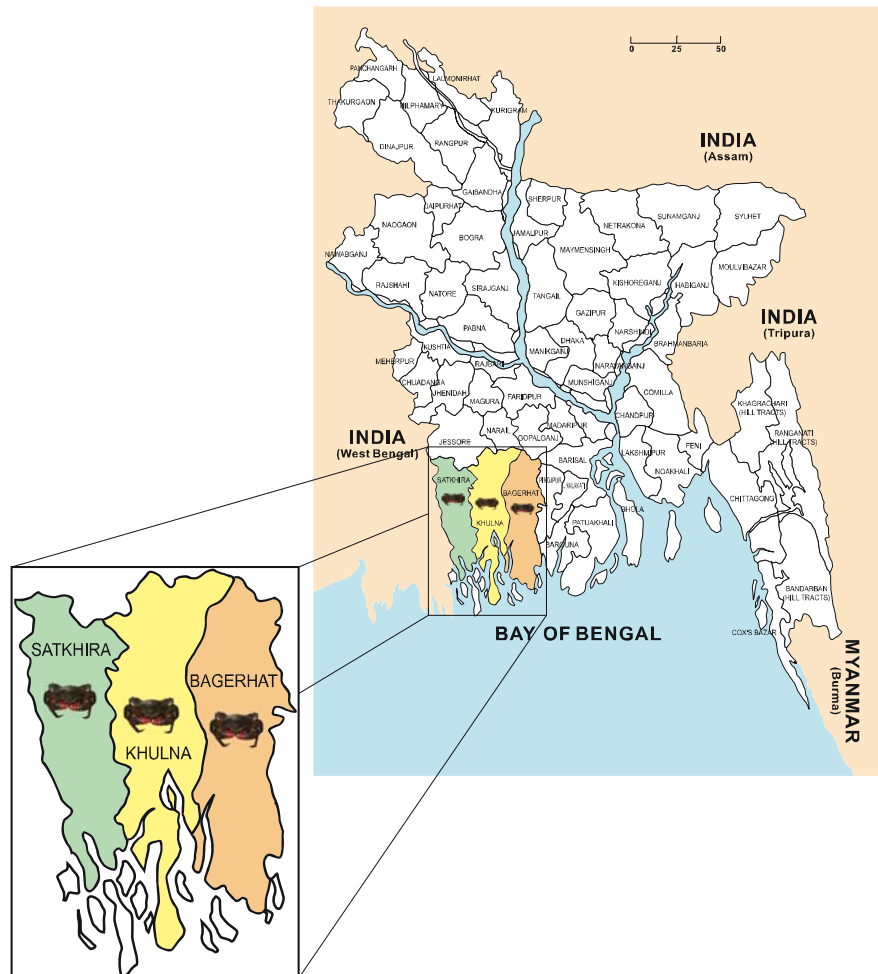


Figure 1. Map of Bangladesh showing the study areas

Data Collection

In order to collect the data a semi-structured questionnaire was developed. The questionnaire was pre-tested in the study areas. Data were collected from February to August 2009 via face to face interviews.

Measurement of different variables

Two different religions were observed in the involved women. Muslims were categorized as 1 and Hindus were categorized as 2. Age of a respondent was measured in terms of actual years on the basis of her statement. A score of one was assigned for each years of her age. For measuring education, a respondent who could not reads and write falls under illiteracy criteria with a score of 0. Score 1 was given who had primary education, for secondary categories as 2 and having more than secondary education categories as 3. Respondent who received training categories as 1 and who did not categories on the score 0. Years of experience also measured as years of farming they involved. Involvement score 2 was given for who were highly involved and paid more than 2 hours for different activities during the fattening period, 1 for medium (less than 2 hour) and 0 for low participation (less than 1 hour).

RESULTS

Table 1 is showing the distribution of the women whether they are involved or not involved in crab fattening in the study areas. About 26% women in the surveyed households were not involved in crab farming. According to their statements, 77% said because of other family work pressure. They did not have enough time to help their partner inr crab farming. While 23% were not interested in crab farming due to other reasons such as religious norms or social constrains (Table 2).

Table 1. Distribution of women according to whether or not they involved in crab fattening by study area

	Khulna	Bagerhat	Satkhira	Total
	Total n=50	Total n=50	Total n=50	n=150
Not involved	11 (22)	15 (30)	13 (26)	39 (26)
Involved	39 (78)	35 (70)	37 (74)	111 (74)

n = sample size. Figures in brackets indicate percentages

Table 2. Distribution of women according to their reason for not involving in crab farming by study area

	Khulna	Bagerhat	Satkhira	Total
	Total n=11	Total n=15	Total n=13	n=39
Work pressure	8 (73)	10 (67)	12 (92)	30 (77)
Others	3 (27)	5 (33)	1 (8)	9 (23)

n = sample size. Figures in brackets indicate percentages

Demographic profile of the involved women

Table 3 is showing the socio-demographic characteristics of the involved women in mud crab fattening.

About 76.58% of the involved women are Hindus and greater population of Muslim women farmers found in the Satkhira region (Table 3). There was no significant difference in age, education, training, experience of the involved women in three study areas (P value > 0.05). However, the religious distribution varied significantly among the women farmers (P value < 0.05). About 30% of the women were young in age ranging from 18 to 28 years old. More than 45% of the involved women only had primary education. Only 8% of the women found to have more than secondary education in the study areas. The average year of experience was about 6.75±3.05 years. It was revealed from the survey, about 28% of them had less than 5 years of involvement in crab fattening. Most of them (66.67%) have an experience of 5 to 10 years.

Table 3. Socio-demographic profiles of involved women in crab fattening by study area

Characteristics	Khulna n=39	Bagerhat n=35	Satkhira n=37	Total n=111
Religion				
Muslim	5 (12.82)	8 (22.86)	13 (35.14)	26 (23.42)
Hindus	34 (87.18)	27 (77.14)	24 (64.86)	85 (76.58)
Age				
18 to 28 years	10 (25.64)	11 (31.43)	12 (32.43)	33 (29.73)
29 to 38 years	12 (30.77)	14 (40)	13 (35.14)	39 (35.14)
More than 38 years	17 (43.59)	10 (28.57)	12 (32.43)	39 (35.14)
Education				
No formal education	11 (28.21)	8 (22.86)	9 (24.32)	28 (25.23)
Primary education	20 (51.28)	15 (42.86)	16 (43.24)	51 (45.95)
Secondary education	5 (12.82)	10 (28.57)	8 (21.62)	23 (20.72)
More than secondary education	3 (7.69)	2 (5.71)	4 (10.81)	9 (8.11)
Experience				
Less than 5 years	7 (17.95)	12 (34.29)	12 (32.43)	31 (27.93)
5 to 10 years	29 (74.36)	23 (65.71)	22 (59.46)	74 (66.67)
More than 10 years	3 (7.69)	0 (0)	3 (8.11)	6 (5.41)
Family size				
Upto 4 members	8 (20.51)	8 (22.86)	20 (54.05)	36 (32.43)
5 to 6 members	18 (46.15)	11 (31.43)	15 (40.54)	44 (39.64)
7 to 8 members	10 (25.64)	6 (17.14)	1 (2.70)	17 (15.32)
More than 8 members	3 (7.69)	10 (28.57)	1 (2.70)	14 (12.61)

Source: Ferdoushi Z. and Xiang-Guo Z. (2009)

n = sample size. Figures in brackets indicate percentages

Table 4 is showing the distribution of involved women according to whether or not they received training on crab farming in the survey areas. A total number of trained women by different government or nongovernmental organizations found higher in Satkhira (36%) region followed by Khulna (33%) and Bagerhat (31%) (Figure 2).

Table 4. Distribution of involved women farmers according to whether or not they received training on crab farming by area

Study area	No	Yes	Total
Khulna	22 (56.41)	17 (43.59)	39 (100)
Bagerhat	19 (54.29)	16 (45.71)	35 (100)
Satkhira	18 (48.65)	19 (51.35)	37 (100)
Total	59 (53.15)	52 (46.85)	111 (100)

Figures in brackets indicate percentages

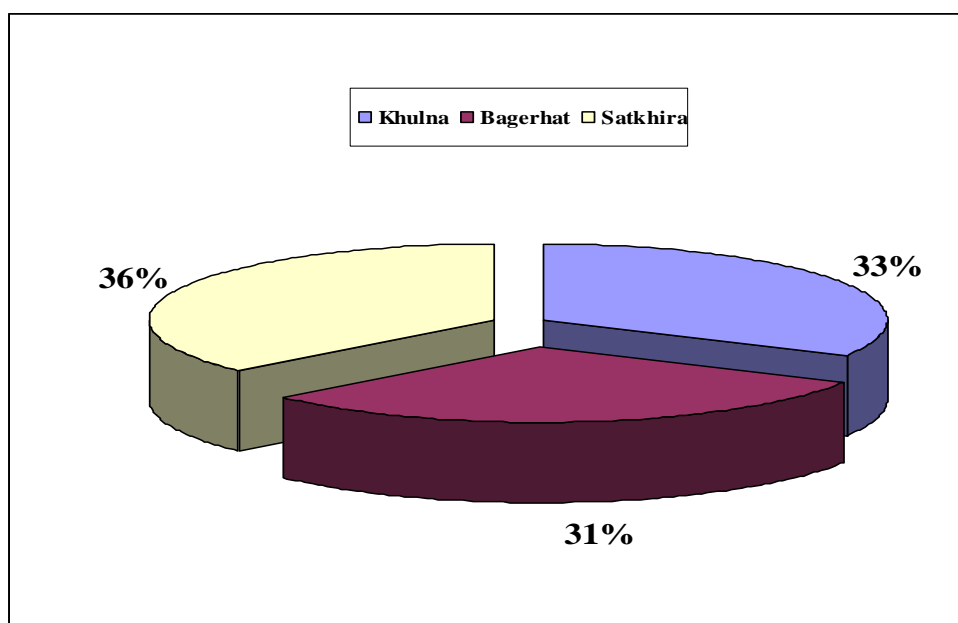


Figure 2. Total percentage of interviewed women farmers received training by study area

Different activities in crab farming

Women from crab fattening households were found to be carrying out several farming activities. All women (100%) were involved in applying feed to crabs while only 18.92% were involved in pond preparation before stocking (Figure 3). During harvesting about 64.86% women were found to involve in this activity. While in crab marketing participation of women was very low, only 33.33% women found to involve in marketing (Figure 4).



Figure 3. Women found to involve in different activities in crab fattening during survey period

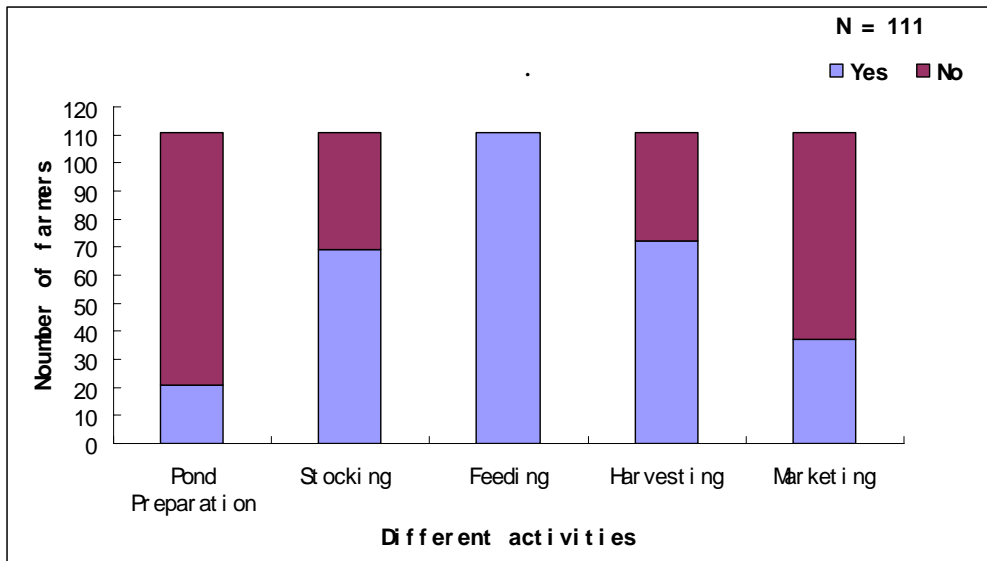


Figure 4. Showing the participation of women in different activities in crab fattening

Correlations between some socio-demographic characteristics with net revenue from crab fattening

Coefficients of correlation were computed to ascertain the relationships between the selected attributes of the women with their net revenue earned from crab fattening. Table 5 is showing the correlations between the net revenue with some selected socio-demographic characteristics. The study revealed that religion, training, level of involvement, education and year of experience have significant positive relationships with net revenue from crab fattening. On the other hand, a negative relationship was observed between age and net revenue during the study period (Table 5).

Table 5. Correlation co-efficient of the women’s participation between net revenue from mud crab fattening and some selected variables

Variables	Coefficient value (r)
Age	-0.013
Education	0.259**
Training	0.450**
Religion	0.216*
Level of involvement	0.290**
Year of experience	0.330**

** Significant at 1% level, * Significant at 5% level

DISCUSSION

In addition of different household activities, the rural women involve in agricultural activities like poultry, gardening, and post harvest crop processing which do not require mobility far from the homestead (Paul and Saudullah, 1991). In Bangladesh about 73% women have dominated practice of homestead gardening (Talukder *et al.* 2001). In this study, about 74% women found to be involved in crab farming. A greater involvement found in Khulna (78%) area.

From different socio-demographic profile religious distribution varied significantly among the women farmers. However age, education, training and experience in crab farming did not varied significantly among the women in those three study areas. All of those finding revealed that anyone could practice the farming regardless of their ages and other characteristics. Crab farming in Bangladesh seems to be a recent development and women involvement in this sector has not been so long existence. From the study results, it is also showed that their involvement in crab farming is about 6.75±3.05 years an average.

A number of development projects are going on by different national and international organizations to train up the crab farmers in order to disseminating proper aquaculture technologies. Fisheries Research Institute in Khulna and different NGOs in those study areas were playing significant role in crab fattening technology development and supporting the unskilled poor women farmers through different training programs and establishing model farms. However, it was found that a total of 47% were trained by different NGOs and by Fisheries Research Institute. A number of innovative technical supports are needed to disseminate the proper technologies to the women.

In the present study, all women found to involve in feed application to their farmed crabs which is less laborious works, while only 18.92% were involved in preparing their pond before stocking. However, a small proportion of women were involved in marketing (33.33%) might be due to the restriction by some social religious norms and due to the pressure of other household works.

Level of formal education is also positively related with adopting any technology (Lemchi *et al.* 2003). In the present study, more educated and more experienced mud crab fattening farmers found to have more benefit that is in line with others finding established the positive impact of literacy over farm efficiency (Ali *et al.* 1982; Phillips 1987; 1994; Veerina *et al.* 1999; Hoq and Moharjan, 2000; Wang *et al.* 1996).

From the correlation results, it is evident that level of involvement positively affected (1% level of significance) the net revenue earned from the crab fattening indicating that higher involvement returned higher revenue. Moreover, the value of correlation coefficient for training indicates that if the women get more and more training through

different organizations could increase the revenue. During the period of the survey, Hindus women were found more capable and competent than Muslim women in crab fattening.

In the recent year, there is raising awareness among the women through their participation in different income generating activities like aquaculture and other farming. However, the number of extension service in public and NGOs sector is not sufficient in Bangladesh. From the study, lack of proper knowledge of crab farming and lack of training are addressed by women as problems for sustainable crab farming. Moreover, they also reported that their movement sometimes restricted by some religious norms.

CONCLUSION

Crab fattening can improve the women's empowerment within household and can provide a better opportunity to them that ultimately could bring change in their decision making empowerment. The present study suggested different training and extension services or working in a groups would be enhanced the skill and knowledge of the women who involved in aquaculture like crab farming in Bangladesh situation.

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