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FOOD SECURITY OF FARM HOUSEHOLDS AND ITS CONSTRAINTS IN MYMENSINGH DISTRICT OF BANGLADESH

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ABSTRACT

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The main purpose of the study was to determine the household food security status and the constraints in achieving food security of local farmers of the selected study areas. Data were collected from a random sample of 104 farm family heads, out of 688, in two selected villages of Phulpur Upazila of Mymensingh District. The data were collected through personal interview by using a pre-tested semi-structured interview schedule during 10 September to 21 October, 2011. Appropriate scales were developed and used to measure the concerned variables. Data revealed that more than half (52.9 percent) of the households were food secured and food intake was 2122 kcal/person/day. On the contrary, 41.3 percent household were food unsecured and consumed between 1805 to 2121 kcal/person/day and 5.8 percent households were severely food unsecured and calorie intake was less than 1805 kcal/person/day. It has also been found out that high price of food items, crop loss due to flood, lack of income generating activities, not getting proper value for rice, high cost of production and insufficient credit support were identified as major constraints in achieving food security by the local farmers in the study areas.

Key words: food security, constraints, farm households, local farmers, bangladesh

INTRODUCTION

The economy of Bangladesh is based on agriculture and it contributes 23 percent in national GDP (BBS 2010). Despite important economic progress, the country remains highly food-insecure (WFP 2014). Bangladesh is ranked 129th out of 169 countries in the 2010 Human Development Index, (UNDP 2010). Around 60 million people consume less than the minimum daily recommended amount of food (HIES 2005). The prevalence rates of global acute and chronic malnutrition among children under 2 years old in Bangladesh are alarming. Growth retardation, an outcome of chronic malnutrition, is widespread affecting an estimated 48.6 percent of the country's 20 million children. A staggering 18.2 percent of women are acutely malnourished, and thus at high risk of giving birth to low birth-weight babies. Approximately one third of adolescent girls in Bangladesh suffer from anemia and micronutrient deficiency (HFSNA 2009).

Unprecedented shocks to food security are not new to Bangladesh. Its history is dotted with famines, cyclones and floods, which have elicited mature responses in dealing with food crises. The consequences of the recent global food price hike have been severe in Bangladesh. Food insecure households typically responded by decreasing diet diversity, consuming less amount of food, reducing the number of daily meals, taking on unmanageable levels of debt and increasing household expenditure on food. In December 2008, one in four Bangladeshis was severely food-insecure as a result of the food price hike and there was a significant increase in severe malnutrition from 2005 levels (WFP 2008). Ensuring food security for all is one of the major challenges that Bangladesh faces today. This is almost synonymous to agricultural development in Bangladesh, as income and livelihood of the vast majority population directly or indirectly depends on agriculture. Despite significant achievements in food grain production since independence in 1971, food availability, food security at national and household level remains a matter of major concern of the Government of Bangladesh.

The economy of Bangladesh is still dominated by agriculture sector. Farmers play the key role in this sector. The food production will increase when the farmers remain in good condition. But this is a matter of great sorrow that they can hardly make both ends meet. As ensuring food security and agricultural development in Bangladesh is almost synonymous, it is important to know the household food security of farmers, who produce foods to feed the whole nation. Usually the concern regarding food security is analyzed at the national level. National level analysis always compares the availability and requirement of food grains. It has to be understood that availability and supply are not always the same. Therefore, it is important to understand the food security status at the farmers' level. Considering these issues, the present study aims to figure out the present food security status and the constraints faced by the farmers to achieve food security.

METHODOLOGY

Research site

The study was conducted in Phulpur Upazila of Mymensingh district as it is identified as one of the high food insecure Upazilas of Bangladesh (RDRS 2005). Two villages namely Nagua and Paikpara were selected as study site (Fig. 1). In total, there were 688 farm families (one farmer from each household) in two villages

which were considered as population of the study. Fifteen percent of the population was randomly selected by using a Table of Random Numbers. Thus, a total of 104 farmers constituted the sample size of the study.

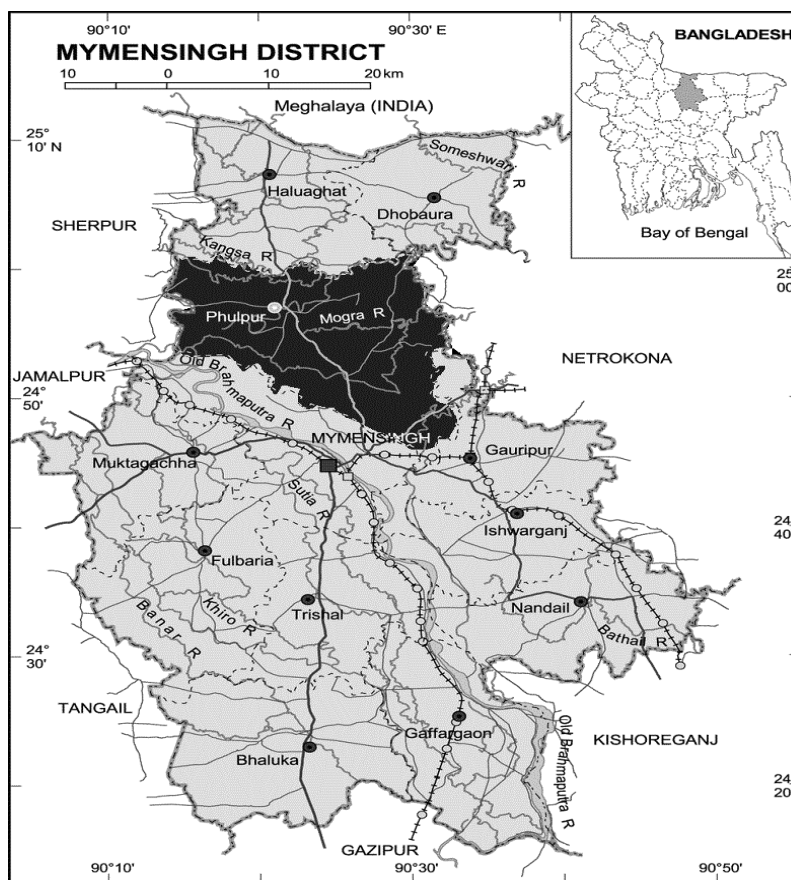


Fig. 1. Map showing the study location

Data collection and analysis

The data were collected during 10 September to 21 October 2011. The household food security status (HFS) was determined using the consumption approach. Consumption is preferable to measure HFS than income because respondents have fewer reasons to lie; it is closer to the utility that people effectively extract from income (FAO 2002). To obtain the actual calorie consumption by the household members, Household Calorie Acquisition method was used. First, the gross household food consumption of last 7 days was converted into calories. Due to differences in household compositions in terms of age and sex, there was a need to adjust the household size to adult equivalent household size. Adult equivalence was developed by World Health Organization (WHO) considering the nutritional requirements of an individual by age and gender. Finally, a concise figure for average calories consumed per person per day was resulted and compared with an estimate of threshold kilocalorie level requirement i.e. 2122 kcal (HIES 2010).

Constraints faced by farmers in achieving household food security status were measured by using structured questions. The farmers were asked to give their opinion on 6 selected constraints which were identified during pre-testing of the interview schedule. A four point rating scale was used for computing the constraint score of a respondent. For each constraint score of 3, 2, 1 and 0 was assigned to indicate the extent of constraint as high, medium, low and not at all respectively. The total constraint scores were computed for each respondent by adding his scores for all the constraints. The possible score could range from 0 to 18. A score of 0 indicated no constraints in connection to household food security while a score of 18 indicated highest level of constraints. The Constraint Facing Index was computed using the following formula:

$$CFI = (C_h \times 3) + (C_m \times 2) + (C_l \times 1) + (C_n \times 0)$$

Where, CFI = Constraints Facing Index

C_h = Number of respondents having high constraints

C_m = Number of respondents having medium constraints

C_l = Number of respondents having low constraints

C_o = Number of respondents having no constraints

Attempts were made to find out suggestions from the respondents to overcome the identified constraints.

RESULTS AND DISCUSSION

Household food security status of the farmers

The household food security status of farmers was measured in terms of calories consumption per person per day of the respective household. The food consumption in terms of calorie intake per person per day in a household ranged from 1474.54 to 2982.01 kcal. The average daily per capita calorie intake by households was estimated to be 2192.16 kcal with a standard deviation of 322.66. The average was lower than the national average of 2318.3 kcal (HIES 2010). Based on the food security status, farmers have been classified into three categories as severely food insecure (calorie intake less than 1805kcal/day/person), food insecure (calorie intake 1805-2121kcal/day/person) and food secure (calorie intake 2122 kcal/day/person or above). The household food security of the respondents has been shown in Table 1. The minimum calorie requirement in Bangladesh is 2122 kcal/person/day (HIES 2010). Table 1 revealed that more than half (52.9 percent) of the households were food secure and had a calorie intake of 2122 kcal/person/day or above. 41.3 percent households consumed between 1805 to 2121 kcal/person/day and these households were food unsecured. However 5.8 percent households were severely food unsecured as people from these households consumed less than 1805 kcal/person/day.

Table 1. Food security status of the farmers

Household food security status	Percentage of farmers
Severely food insecure (less than 1805 kcal/day/person)	5.8
Food insecure (1805-2121 kcal/day/person)	41.3
Food secure (2122 kcal/day/person or above)	52.9

Source: Field Survey, 2011

Apart from the prevailing deficit in total calorie intake, the normal diet of farm family members of the study area is seriously imbalanced. Most of the severely food unsecured farm households kept small amount of tiny fishes and vegetables in their daily meal. Table 2 revealed that cereal consumption was higher among the people from severely food insecure and food insecure households than that of food secure households because they don't have sufficient ability to get calories from other food sources. These farm households kept small amount of fish and meat in their diet. That amount was much less than the desirable intake. In addition, other than the cereals, the other food items consumed by all categories of household were much lower than that of the desirable intake (HIES 2007).

Table 2. Per capita food consumption by the households of the study area

Name of food items	Average amount of food consumed by different households (gm/person/day)			Desirable intake (gm/person/day) (HIES 2007)
	Severely food insecure	Food insecure	Food secure	
Rice/Wheat	424	410	375	358
Pulses	8	12	26	70
Fish, Meat and Egg	57	89	103	121
Potato	50	83	81	228
Vegetables	90	117	139	143
Fruits	23	34	40	114

Source: Field Survey, 2011 and HIES 2007

Constraints faced by the farmers in achieving food security

The observed score of the constraints faced by the farmers in achieving their household food security status ranged from 8 to 14 against a possible range of 0 to 18. The mean and standard deviation of the score were 12.53 and 2.03 respectively. This reveals that there are variations in facing constraints to achieve food security. This might be due to the different socio-economic background of majority of the farmers.

Table 3. Classification of farmers according to their overall extent of constraints in achieving household food Security

Range		Respondents			Mean	SD
Possible	Observed	Categories	Number	Percent		
0-18	8-14	Low (up to 6)	0	0	12.53	2.033
		Medium (7-12)	31	29.8		
		Above 12	73	70.2		

Source: Field Survey, 2011

Farmers were classified into three categories based on their overall extent of constraints score (Table 3). Among the respondents, highest portion (70.2 percent) of the farmers faced high constraints and 29.8 percent farmers faced medium constraints in achieving household food security. The extent of constraints faced by the farmers

in securing household food security in terms of Constraint Facing Index (CFI) along with their rank order based on the CFI have been presented in the Figure 2.

Figure 2 indicated that the constraint which ranked in the first was 'high price of food items' followed by 'crop loss due to flood', 'lack of income generating activities' and 'not getting proper value of rice' was ranked fourth. The last two constraints were 'high cost of production' and 'insufficient credit support'. Farmers' access to food is mainly obstructed due to lack of purchasing power and recent hike in food price worsen the situation. For this reason, farmers indicated the high price of food items as their prior constraint in securing household food security.

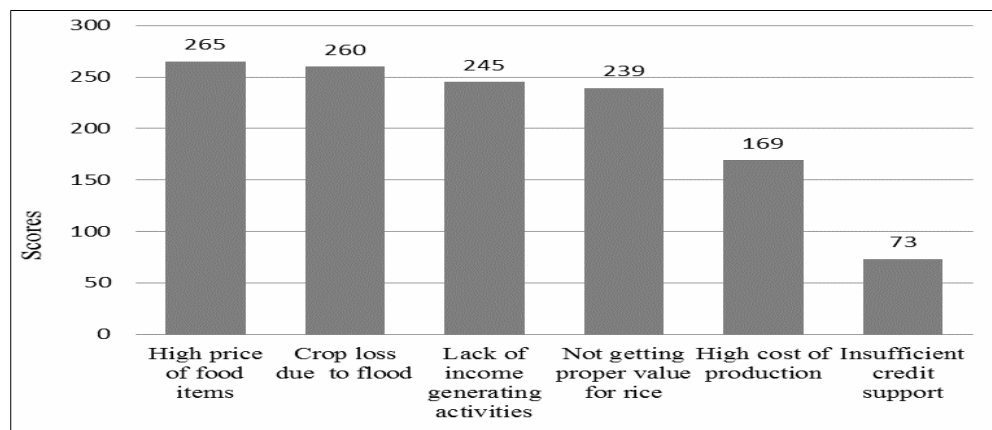


Fig. 2. Rank order of constraints faced by the farmers in achieving household food security

Besides, the *aman* rice field of the study area was seriously affected by flood. Probably that is the reason of flood has been identified as important constraint by the farmers. During lean period farmers usually remain idle and they do not have opportunities to utilize their labour, and possibly that is the reason of lack of income generating activities have emerged as important constraint. Farmers identified the insufficient credit support as the least important constraint. This may be due to the fact that a good number of NGOs including BRAC, ASA, GRAMAUS, Grameen Bank and World Vision are running their activities in the study area.

During interview the farmers were asked to indicate the probable suggestions to overcome the constraints. The suggestions provided by them are summarized below:

- Majority of the farmers of the study area depend on agriculture as their main source of income. During lean period farmers usually remain idle and do not have the opportunity to earn enough money to satisfy their basic needs. Creating alternative income generating activities will help the farmers to income more and increase their purchasing power. Ultimately, it will improve their household food security status.
- Flood made a considerable damage to the transplant *aman* rice in the study area. Farmers suggested the construction of a dam to prevent the loss.
- During the harvesting period of agricultural produce the farmers do not get proper price of their product and again they have to buy the same product afterward with a high price from the market. This makes them to reduce their purchasing capacity and thus increase food insecurity. Thus, developing market facilities for selling agricultural produce at fair price should be developed.
- Sometimes farmers need immediate credit facilities to bear the high cost of production. Providing credit at low interest rate in easy terms and conditions will help them to cope with these situations.

CONCLUSION

The findings of the study revealed that 47 percent households of the farmers were food insecure i.e. they consumed below the minimum calorie requirement (2122 kcal/person/day). Among them, 41 percent households consumed between 1805 to 2121 kcal/person/day and six percent households consumed less than 1805 kcal/person/day. On the other hand, 52.9 percent of the households consumed above the minimum calorie requirement. Thus, it might be said that almost half of the households remain below the minimum level of food security. Considering the causes of achieving food security farmers expressed their opinion that the high price of food items, crop loss due to flood, lack of income generating activities, not getting proper value for rice, high cost of production and insufficient credit support were identified as major problems in the study area. Thus, the state of achieving household food security has been hindered mainly by the high price of food due against less income generating opportunities. Therefore, to overcome these constraints the government or other NGOs should take initiative to execute the suggestions given by the local farmers to achieve food security.

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