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Role of Government and Non-Government Organizations in Boosting Agricultural Production towards Meeting Household Nutrition as Perceived by Rural Women

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ABSTRACT

The study was undertaken to have an understanding of rural women's perception of the role played by the government and non-government organizations (GOs and NGOs) to boost agricultural production in Lama upazila under Bandarban district of Bangladesh towards meeting household nutrition. Besides, attempts were made to explore the quality of service provided by the GOs and NGOs to boost agricultural production and to explore the problems faced by them to meet the demand of household nutrition. Eighty six percent of rural women perceived the role played by the GOs and NGOs as 'somehow satisfied' to 'satisfied level'. Among the rural women, 90 percent of the respondents expressed that they face moderate to high level of problems to meet their demands for household nutrition. The services from the all concerned GOs and NGOs should be provided in such a way that could help more to boost agricultural production as well as meet the demand of household nutrition of the rural women in the study area.

Keywords: *Agricultural Production; Household nutrition; GO and NGO; Perception; Bangladesh*

INTRODUCTION

Agriculture remains a primary source of energy and nutrients for the population and also impacts human nutrition in both positive and negative ways. In this regard, agriculture is trying to encompass activities related to production, acquisition and utilization of food to prevent both under and over nutrition in an economically, environmentally, socially and culturally sustainable way (Uccello et al, 2017). As Bangladesh is one of the most densely populated countries in the world, the agriculture sector plays as a pillar of the economy, employing more than half the population (USAID, 2017). In recent years, new themes to emerge include climate change, nutrition, food safety, post-production and post-emergency recovery in the agriculture sector (FAO, 2014). Government organizations (GOs) likes Bangladesh Agricultural Research Council (BARC), Bangladesh Agricultural Development Corporation (BADC), Bangladesh Agricultural Research Institute (BARI), Bangladesh Rice Research Institute (BRRI), Bangladesh Jute Research Institute (BJRI) and Bangladesh Institute of Nuclear Agriculture (BINA) are mainly responsible for the development of agricultural technologies in their respective fields (Karim et al, 2009). These institutions have both national and international linkages to carry out

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research activities and disseminate agricultural technologies in large scale. In addition, activities are mostly handled by the public sector and the main agencies responsible for this job are Department of Agriculture Extension (DAE), Department of Fisheries (DoF) and Department of Livestock Services (DLS) (MoA, 2015). Non-government organizations (NGOs) and the private sector likes BRAC, Proshikkhan Shikkha Karmo (PROSHIKA), Grameen Bank, Bangladesh Resource Centre for Indigenous Knowledge (BARCIK) and Congregations around Richmond Involved to Assure Shelter (CARITAS) are also responsible for the development of improved crop varieties and associated technologies to boost agricultural production (Alam, 2012 and Siddika et al, 2018). The main challenge for agriculture in Bangladesh is to consolidate the growth that has been achieved over the past 20 years, in the face of declining arable land per person, depletion of ground water, periodic natural disaster due to extreme weather events, changing dietary patterns towards foods and other challenges (Walsham, 2009 and FAO, 2014).

Agriculture in Bangladesh has become regularly vulnerable to the hazards of climate change–flood, drought and salinity in particular. In addition, poor management practices, especially those of pests and diseases, fertilizer, water and irrigation have largely contributed to significant decline in agricultural productivity (Agrawala et al, 2003 and Mondal, 2010). In Bangladesh, women face serious challenges due to social and cultural norms that inhibit their ability to fully participate in the economy and must overcome the barriers to entirely realizing economic gains. Of all food security indicators in Bangladesh, improvements in food production have seen the slowest progress, especially in rural areas (GFSS, 2018). Access to adequate food may go together with malnutrition if food intake is not of balanced nutrition. Both under nutrition and over nutrition are problems of malnutrition which may not be solved just by adequate food in imbalance of nutritional composition (Nath, 2015).

However, Government has recognized the fact that equal participation of public and private organizations can solve the problem by doing various activities. Apart from this, government encouraged the non-government organizations to undertake proper steps for the development of agricultural production by liberalizing its policy (Shamsuddoha, 2009). So, the study was conducted by focusing the following objectives: (i) to assess rural women's perception of the role played by the GOs and NGOs to boost agricultural production towards meeting household nutrition (ii) to explore rural women's perception of the quality of services provided by the GOs and NGOs to boost agricultural production, and (iii) to explore the problems faced by the rural women to meet their demand of household nutrition.

METHODOLOGY

The study area was confined to Sarai, Gajalia, Lama sadar and Fasyakhai unions of Lama upazila of Bandarban district in the hilly regions in Bangladesh (Fig.1). To obtain the real status on socio-economic condition of the rural women, rural women's perception of the role played by the GOs and NGOs to boost agricultural production, rural women's perception of the quality of services provided by GOs and NGOs and problems faced by the rural women are the main issues of investigation. The selected unions were suggested by the concerned officers of the upazila, especially the Upazila Agriculture Officer, Upazila Fisheries Officer and Upazila Livestock Officer.

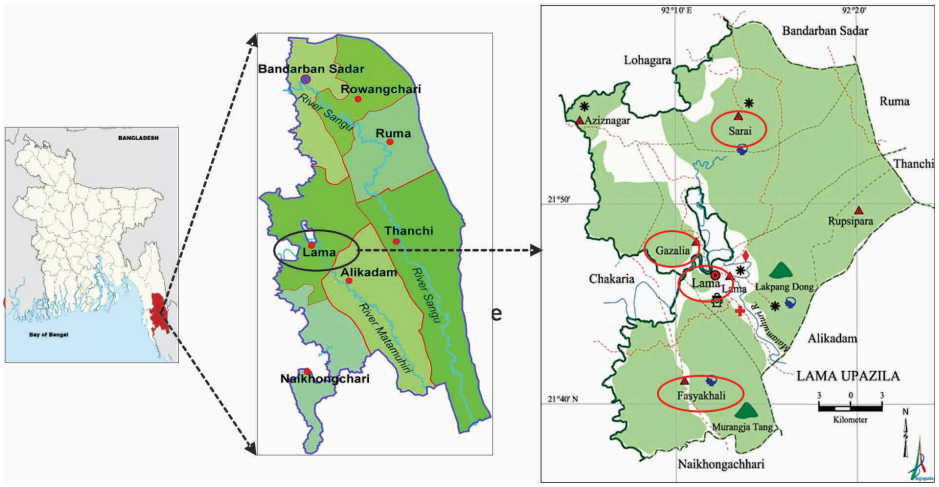

Figure 1. Map of the Study Area (Lama Upazila)

A total of 300 rural women (those who played their functional role in maintaining the household farming) from 300 households in the four unions of Lama Upazila constituted the study's key population. A simple random selection method was used to choose the sample from the population, which were 110 rural women. The empirical data were collected through personal interview along with Focus Group Discussions and observations during the month of April, 2020. Before collecting the final data, pre-testing of the interview schedule was made to locate any defects regarding the questions and statements. The Statistical Package for Social Sciences (SPSS) version 20 was used to analyze the data.

The role played by the GOs and NGOs were first identified through Focus Group Discussions (FGDs). The rural women were asked to give their responses to measure perception against 10 selected role revealed through FGD that played by the GOs and NGOs for boosting agricultural production towards meeting household nutrition. A four-point rating scale was used for computing the perception score of a respondent while '0', '1', '2' and '3' was assigned to indicate the role played by the GOs and NGOs perceived as 'not satisfied', 'somewhat satisfied', 'satisfied' and 'highly satisfied' respectively by the respondents. Finally, by adding all the frequency counts of each of the scale cells, the total value of RPI was calculated. The rank order was made based on the RPI score for better understanding of each item. By using the following formula, the RPI was calculated.

$$RPI = (R_0 \times \mathbf{0}) + (R_1 \times \mathbf{1}) + (R_2 \times \mathbf{2}) + (R_3 \times \mathbf{3})$$

Where,

RPI = Role Played Index; R_0, R_1, R_2 and R_3 represent the number of respondents who perceived the played role by the GOs and NGOs as 'not satisfied', 'somewhat satisfied', 'satisfied' and 'highly satisfied' respectively.

As there were 110 respondents, Role Played Index (RPI) could range from '0' to '330', where '0' indicated not satisfied roles while '330' indicated highly satisfied roles regarding contribution to boost agricultural production towards meeting household nutrition.

Two focus group discussions (FGDs) were conducted from four unions (Sarai, Gajalia, Lama sadar and Fasyakhai) in order to assess the rural women's perception of the quality of services provided by the GOs and NGOs. Outcomes of the separate two FGDs were merged together in order to attain a comprehensive idea about

the quality of services provided by the GOs and NGOs. For each FGD, eight women (included in the main sample of data collection) were selected and the quality of services during the FGD were discussed thoroughly and recorded accordingly.

The problems faced by the rural women were first identified through Focus Group Discussions (FGDs). The rural women were asked to give their responses against 12 selected major problematic aspects which they confronted for the demand of household nutrition. A four-point rating scale was used for computing the problem score of a respondent while '0', '1', '2' and '3' was assigned to indicate extent of problem as 'no', 'low', 'moderate' and 'high' respectively. Finally, by adding all the frequency counts of each of the scale cells, the total value of PFI was calculated. The rank order was made based on the PFI for better understanding of the problem items investigated. PFI was calculated by using the following formula:

$$PFI = (P_0 \times \mathbf{0}) + (P_1 \times \mathbf{1}) + (P_2 \times \mathbf{2}) + (P_3 \times \mathbf{3})$$

Where,

PFI = Problem Faced Index; P_0, P_1, P_2 and P_3 represent the number of respondents who faced the problem as 'no', 'low', 'moderate', and 'high' problem respectively.

As there were 110 respondents, Problem Faced Index (PFI) could range from '0' to '330', where '0' indicated no problems and '330' indicated high level of problems in respect to meet the demand of household nutrition.

FINDINGS AND DISCUSSION

Role of GOs and NGOs in Boosting Agricultural Production towards Meeting Household Nutrition

An attempt was made to investigate the roles that the existing GOs and NGOs played in enhancing agricultural production and ensuring household nutrition, as well as rural women's perceptions of the role played by the GOs and NGOs in the study areas.

Data presented in Table 1 depict that the highest proportion of the rural women (86.4%) were with the perception upon somewhat satisfied to satisfied level of roles played by various GOs and NGOs to boost agricultural production towards meeting household nutrition. Only 13.6 percent of the respondent rural women perceived the role of GOs and NGOs with highly satisfied level. Miah et al., (2018) also found more or less similar findings in their study. This may be because of the remoteness of the study areas in hills. Though the workers in different GOs and NGOs may have strong desire to work with the respondents, the geographical barriers as well as frequent unstable situation of the areas create hindrance to work with full potentials in many cases (Begum et al, 2019).

Table 1. Distribution of Respondents Based on their Perception of Role Played by GOs and NGOs to Boost Agricultural Production towards Meeting Household Nutrition

Categories of Perception (Unit: score)	Rural women (n=110)		Mean	SD
	Number	Percent		
Not satisfied (0)	0	0	6.65	4.57
Somewhat satisfied (1 to12)	64	58.2		
Satisfied (13-24)	31	28.2		
Highly satisfied (>24)	15	13.6		

Data in Table 2 reflect the rank order of different roles played by different organizations (both GOs and NGOs) to promote agricultural production in the study area and to mitigate the challenges of household level nutritional problems in the study area.

Table 2. The Rank Order of the Roles Played by GOs and NGOs in the Study Area to Boost Agricultural Production and Meeting Household Nutrition

Role	RPI	Rank order
Provision of production related information	168	1
Production input support	144	2
Provision of varietal information	138	3
Support to nutrition education	133	4
Role	**RPI**	**Rank order**
Women empowerment	129	5
Credit support	125	6
Household decision-making	119	7
Agricultural training support	110	8
Support to extension and study tours	105	9
Research and development support	99	10

Findings show that 'provision of production related information (168)', 'production input support (144)' and 'provision of varietal information (138)' got the highest scores playing roles by the GOS and NGOs to boost agricultural production towards meeting household nutrition as perceived by the rural women. Ashley and Maxwell (2001); Fanzo et al., (2015) and Mamun-ur-Rashid et al., (2017) found that appropriate high-level support and capacity development, agricultural extension services, through provision of improved information, training, skills and services and well-trained human resources provide a substantial productivity that lead to higher nutritional quality.

It is mentioned in Table 2 that 'support to nutrition education (133)' and 'women empowerment (129)' took fourth and fifth position roles respectively played by the GOS and NGOs to boost agricultural production. Alam and Rahaman (2008); Alam (2008) and Alam et al., (2009) showed that major part of the population employed at agriculture earlier was the school drop-out from the primary, secondary and higher secondary school levels.

The services provided by the GOs and NGOs to boost agricultural productions were also explored through conduction of FGDs in order to triangulate the findings achieved through individual interview. In general, the perception of the rural women was good about the services of the organizations. Some of the matters were not as satisfying as the women expected. Anyway, the major outcomes of the discussion specifically indicate that the overall services and communications for major activities of the organizations were fair to good. In general, the credit functions of the NGOs were very strict and sometimes inhuman. Besides, the

interest rate of the loan was very high. Moreover, SAAOs, who work for the Upazila Agricultural Office, provided inconsistent and unsatisfactory services. No service was received by the rural women about product marketing and the input dealers' information was not always thought to be credible. Furthermore, less or no contact from livestock and fisheries offices of upazila. Therefore, more services are expected from all the concerned organizations for better farm and household production. Finally, the results of the FGD strongly support the findings received through the individual interview.

Profile Characteristics of Rural Women

Perceptions of the rural women become influenced by their characteristics. In this study eight selected characteristics of the rural women were considered. The characteristics profile of the rural women has been presented in Table 3.

Table 3. Socio-Economic Characteristics of Rural Women

Characteristics (Unit of measurement)	Range		Rural women (n=110)		Mean	SD
	Possible	Observed	Category	%		
Age (Years)	Unknown	20-65	Young (18-35)	37.3	38.69	10.48
			Middle aged (36-55)	46.3		
			Old (> 55)	16.4		
Years of schooling (Years)	Unknown	0-10	Illiterate (0)	31.8	4.92	6.41
			Primary (1-5)	33.7		
			Secondary (6-10)	30.9		
			Above secondary (>10)	3.6		
Household size (No. of members)	Unknown	1-12	Small (1- 4)	31.8	5.35	1.82
			Medium (5-8)	63.7		
			Large (9-12)	4.5		
Household farm size (Hectares)	Unknown	0.02-6.48	Landless (<0.02)	2.7	2.81	0.81
			Marginal (0.021-0.20)	33.6		
			Small (0.21-1.0)	45.5		
			Medium (1.01-3.0)	16.4		
			Large (>3.0)	1.8		
Annual family income ('000' Tk)	Unknown	6-306	Low (≤80)	43.6	93.89	62.47
			Medium (81-150)	40.0		
			High (>150)	16.4		
Involvement in local associations (No. of years)	Unknown	0-44	No (0)	10.9	4.66	7.34
			Low (1 to 10)	74.6		
			Moderate (11-20)	10.9		
			High (>20)	3.6		

Characteristics (Unit of measurement)	Range		Rural women (n=110)		Mean	SD
Training exposure (Days of training)	Unknown	0-122	No (0)	21.8	6.47	17.15
			Short (1- 4)	53.7		
			Medium (5-14)	11.8		
			Long (>15)	12.7		
Exposure to farming information (Scale score)	0-33	0-24	No (0)	0.9	13.40	3.55
			Low (1 to 10)	22.7		
			Moderate (11-20)	35.5		
			High (>20)	40.9		

Data in Table 3 reveal that majority of the rural women (46.3%) were middle-aged and considerable proportion of the rural women (33.7%) was primary educated. The highest proportion (63.7%) of the rural women had the medium sized household while the farm size of the highest proportion of the rural women (45.5%) was small. Data related to annual family income indicate that the highest proportion of the rural women (43.6%) were in low income category while the highest proportion of the rural women (74.6%) had low engagement with the local associations. More than half (53.7%) of the rural women were taking short duration of training while the highest proportion of the rural women (40.9%) had high level of exposure to farming information. Uddin et al., (2017), Wossen et al., (2017) and Hasibuan et al., (2019) also found more or less similar findings in their study.

Problems Faced by the Rural Women to Meet the Demand of Household Nutrition

Data in Table 4 indicates that more than two-thirds (69.1%) of the rural women faced moderate problems followed by 20.9% high along with an average of 17.86 and the standard deviation of 2.84.

Table 4. Distribution of Respondents According to Problems Faced by the Rural Women to Meet the Demand of Household Nutrition

Categories of Problem (Unit: score)	Rural women (n=110)		Mean	SD
	Number	Percent		
No (0)	0	0	17.86	2.84
Low (1 to 14)	11	10		
Moderate (15-28)	76	69.1		
High (>28)	23	20.9		

Data show that about one fifth (20.9%) of the respondents were found with problems of high category in boosting agricultural production in the study areas. It was reported during field survey that a local level NGO namely, N Z Akota was involved in mid-day school meal programme under the guidance of Upazila Education Office, Furthermore, the Upazila Agriculture Office took some initiatives for rural women to produce food and utilize them in a better way to ensure household nutrition. Those initiatives were supposed to help them address issues of household food utilization.

The intensity of individual problems faced by the rural women to meet the demand of household nutrition has been examined by computing rank order through the response of the rural women is shown in Table 5.

Table 5. Rank Order of the Problems Faced by the Rural Women to Meet the Demand of Household Nutrition

Aspects of problem	PFI	Rank order
Unstable food price	245	1
Lack of nutritional knowledge	233	2
Scarcity of food conserving facilities	229	3
Lack of cooking materials	222	4
Weak communication system	216	5
Absence of refrigerator	213	6
Lack of household food making knowledge	212	7
Social and religious constraints	211	8
Lack of money for buying nutritious food	206	9
Electricity problem	203	10
Sanitation problem	200	11
Money shortness for food conserving materials	197	12

Data shows that 'unstable food price (245)' got the highest scores facing problem by the rural women to boost agricultural production. Nath (2015) also found instability in food price in his study which arised as a major problem in agricultural production. It is evident from Table 5 that 'lack of nutritional knowledge (233)', 'scarcity of food conserving facilities (229)' and 'lack of cooking materials (222)' secured second, third and fourth ranks respectively in facing problems by the rural women. Shelly and D'Costa (2000); Parveen (2008) and Malone et al., (2013) found that most of the training sessions and extension activities are executed by male extension agents and that's why the rural women were unable to involve themselves in such significant, gnostic programmes. Because, the women and men outside the family are not encouraged, even prohibited to socialize with one another. Additionally, the 'weak communication system (216)' in hilly areas was one of the vital problems faced by the rural women. Duedu et al., (2014) and Wanwimolruk et al., (2016) found that modernization of supply chains (e.g., refrigeration and quality control systems for preservation) only offer a partial solution for both own consumption and sold in supermarkets which is certified as conforming to safety and quality standards.

CONCLUSION

The findings lead to the conclusion that majority of the rural women perceived somewhat satisfied to satisfied level of roles played by the GOs and NGOs. The existing organizations work and their nature of support may help accelerate the agricultural production towards meeting household nutrition. The organizations need more support in extending their service areas with enhanced capacities. Regarding this, special fund allocation, training and awareness campaign from the part of the government are imperative in capacitating the organizations to discharge their duties duly. Because, the hilly areas claim special attention for improvement of overall scenario of livelihood.

Although the overall perception of the rural women was favourable about the services of the organizations, some of the issues were not as satisfying as the women expected to boost their agricultural production to meet household nutrition. Ninety percent of the respondents

expressed that they faced moderate to high level of problems to meet their needs for household nutrition. Majority of those problems were concerned to unstable food price, lacking in nutritional knowledge and scarcity of food preservation facilities. Boosting of agricultural production to meet the demand of household nutrition would remain critical if the aforesaid problems are not addressed duly. Specialized operations, awareness programmes and subsidies may overcome those problems in meeting demands of nutrition at household level.

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