J. Sylhet Agril. Univ. 3(1):75-79, 2016 **ISSN: 2308-1597**

WOMEN PARTICIPATION IN SUMMER VEGETABLES PRODUCTION IN A SELECTED AREA OF MYMENSINGH DISTRICT

A A Jahan[1] and M A Khatun*[2]

[1]*Supervisor, Bangladesh Krihsi Bank, Dewkhola branch, Mymensingh, Bangladesh*
[2]*Department of Agricultural Statistics, Bangladesh Agricultural University, Mymensingh-2202, Bangladesh*

Abstract

The study was conducted to assess the contribution of rural women in generating household income through summer vegetables production. Primary data were collected from 45 randomly selected summer vegetable growers of Char Ishawardi village under Sadar upazila of Mymensingh district in Bangladesh. The study showed that the male and female counterparts of low, medium and high income households rendered their involvement in different activities for 328 and 220 man-days, 421 and 322 man-days, 500 and 360 man-days per year, respectively. Average annual income of low, medium and high income households stood at Tk 47455, 88434 and 125000, respectively. Women of these three categories contributed Tk 20875, 28600 and 38000 which were 43.99, 32.34 and 30.40 percent of total household income, respectively. The average annual income earned by low, medium and high income households from summer vegetables were Tk 12440, 21568 and 33980 which were 26.21, 24.39 and 27.18 percent, respectively. In summer vegetables production the participation of women were 16.19, 12.44 and 12.53 percent for low, medium and high income households, while participation of men were 10.03, 11.95 and 14.66 percent, respectively. In summer vegetables production the participation of women in low income households was higher than other income household groups.

Keywords: Summer vegetable, rural women, participation, household income.

Introduction

Bangladesh is an agro-based developing country. Environment in Bangladesh is quite rich for the production of a large variety of fruits and vegetables. Vegetables are the most inexpensive sources of nutrients but production in Bangladesh is low and therefore it is not possible to provide her population with nutritionally balanced diet. The government of Bangladesh has given much emphasis on diversified crop production, particularly on the production of vegetables all the year round.

Women in rural Bangladesh are mostly underutilized and largely unrecognized. Women are involved in different works related to production, processing and household activities. From a number of micro surveys it has been found that since independence in 1971, there has been a steady upward trend in the participation of women in income generating activities (Chowdhury, 2009).

Women are struggling hard to earn their livelihood and trying to overcome poverty but they generally do not get any incentive from the influential people of the locality. This study aims at exploring the contribution of rural women in household income and employment generation through participating in summer vegetables like okra, bitter gourd and snake gourd productions in some selected areas of Mymensingh district in Bangladesh. The study also assesses the nature and extent of women participation in summer vegetables production.

A good number of studies are available to costs and returns of different vegetables including okra, bitter gourd and snake gourd (Chowdhury, 2009; Das, 2008; Gill and Walla, 2007; Ritu, 2007; Rani, 2005; Ritu, 2004; Ani, 2003; Sultana, 2003). However, no study has so far been reported in the Mymensingh district where vegetables are being grown in abundance. The present study will be helpful to the researchers for further studies of similar nature and to the extension personals who are directly involved in different agricultural development programmes and to the

***Corresponding author: M A Khatun,** Department of Agricultural Statistics, Bangladesh Agricultural University, Mymensingh-2202, Bangladesh, email: asmakhatun_2000@yahoo.com.*

planners for making effective plans. The study will also aid extension workers to learn the profitability and production problems of the selected vegetables and therefore they will be able to give suggestions to the farmers relative to various aspects of vegetables production.

Materials and Methods

Char Ishwardi village under Sadar upazila of Mymensingh district in Bangladesh was selected purposively for this study. For sampling at first a list of the households who produce summer vegetables (okra, bitter gourd and snake gourd) was prepared. From this list, 45 (low income 15, medium income 15 and high income 15) households were chosen randomly for the present study. The data were collected by the author herself through personal interviews during the period from August to November 2011. In this study, annual income was calculated by the following formula:

Calculation of annual income: The annual income was measured in Taka. The following equation was used to calculate annual income:

$$Y = \sum_{i=1}^{n} A_i + \sum_{i=1}^{n} B_i$$

Y = Annual income (Tk.)
A_i = Annual total income (male + female) from i^{th} summer vegetables production activities.
B_i = Annual total income (male + female) from i^{th} other activities

Total annual income Tk 47455 to 88433 is considered as low income, Tk 88434 to 124999 is considered as medium income and above Tk 125000 is considered as high income households in this study.

Specific model is as follows:

The specification of the Cobb-Douglas production function was as follows:

$Y_i = a\ X_1^{b1} X_2^{b2} X_3^{b3} X_4^{b4} X_5^{b5} X_6^{b6} e^{ui}$

It can be written in linear form as follows:

$\ln Y = \ln a + b_1 \ln X_1 + b_2 \ln X_2 + b_3 \ln X_3 + b_4 \ln X_4 + b_5 \ln X_5 + b_6 \ln X_6 + u_i$;

Where,

ln = natural logarithm
Y= Yearly income (Tk)
X_1= Land (ha)
X_2= Number of female earning member
X_3= Education of the households head (year of schooling)
X_4= Family size (No.)
X_5= Indebtedness (Tk year^{-1})
X_6= Women income (Tk year^{-1})
a = constant or intercept term
b_1, b_2, b_3, b_4, b_5 andb_6 = slope coefficient and
u_i= error term.

Here intercept is a fixed component and U is a random effect component, the random effect which is assumed to follow a normal distribution with mean zero and variance σ^2.

Results and Discussion

Male and female participation in summer vegetables production activities: Male and female farmers produce vegetables including okra, bitter ground, snake ground, etc. Total man-days in a year season^{-1} were considered and

the man-days were counted as eight hours of work a day. On an average men and women worked 328 and 220 man-days (low income), 421 and 322 man-days (medium income) and 500 and 360 man-days (high income) a year (Table 1). The male members of low, medium and high income households spent 23.17, 22.32 and 22.32 percent of total labor whereas women members of low, medium and high income households spent 28.18, 23.60 and 23.61 percent of their time for summer vegetables production. Female members of low, medium and high income family in the study area worked more in summer vegetables production activities than male members.

Table 1. Low, medium and high income households and gender role of participation in different activities.

Different activities	Low income households				Medium income households				High income households			
	Time spent by men		Time spent by women		Time spent by men		Time spent by women		Time spent by men		Time spent by women	
	No. of days	% of total days	No. of days	% of total days	No. of days	% of total days	No. of days	% of total days	No. of days	% of total days	No. of days	% of total days
Summer vegetables production activities	76	23.17	62	28.18	94	22.32	76	23.60	120	22.32	85	23.61
Rice production	25	7.62	12	5.45	34	8.08	28	8.70	48	8.08	35	9.72
Petty business	34	10.37	9	4.09	48	11.40	18	5.59	56	11.40	30	8.33
Service	65	19.82	5	2.27	64	15.20	36	11.18	70	15.20	50	13.89
Daily labor	25	7.63	59	26.82	100	23.75	60	18.63	90	23.75	60	16.67
Van pulling	80	24.39	-	-	16	3.80	-	-	16	3.80	-	-
Vegetable and fruit production	10	3.05	27	12.27	36	8.55	40	12.42	50	8.55	46	12.78
Taking care of livestock and poultry	9	2.74	31	14.09	23	5.46	42	13.04	40	5.46	42	11.67
Rice processing	4	1.22	15	6.82	6	1.43	22	6.83	10	1.43	12	3.33
Total man-days	328	100	220	100	421	100	322	100	500	100	360	100

It can be seen from Table 2 the low, medium and high income households earned from summer vegetables were Tk 12440, 21568 and 33980, respectively which were 26.21, 24.39 and 27.18 percent of total income.

Table 2. Sources of income of sample households by income categories.

Sources of income	Categories of household (Tk year^{-1})		
	Low income	Medium income	High income
Crops	6500(13.69)	11876(13.43)	28000(22.4)
Summer vegetables	12440(26.21)	21568(24.39)	33980(27.18)
Winter vegetables	6500 (13.69)	15000(16.96)	11000(8.8)
Fruits	780(1.64)	2800(3.17)	3800(3.04)
Livestock and poultry	1200(2.53)	3300(3.73)	16000(12.80)
Business	4735(9.98)	7000(7.92)	15000(12)
Services	1800(3.79)	6500(7.35)	8500(6.8)
Van pulling	4500(9.48)	5890(6.66)	4018(3.21)
Daily labor	7500(15.80)	12000(13.57)	1200(0.96)
Others	1500(3.16)	2500(2.83)	3500(2.80)
Total income	**47455 (100)**	**88434 (100)**	**125000 (100)**

Figures in the parentheses are percentages.

Contribution of women to family income: Women belonging to the low, medium and high income households contributed annually Tk 20875, 28600 and 38000 which constituted 43.99, 32.34 and 30.40 percent of the total income, respectively (Table 3). It also reveals that the contribution of women in low income household was greater than medium and high income households.

Table 3. Contribution of women to total family income in low, medium and high income households.

Categories of households	Average annual household income (Tk)	Earning of women Tk year^{-1}	Percent contribution to total income
Low income	47455	20875	43.99
Medium income	88434	28600	32.34
High income	125000	38000	30.40

Contribution of women in summer vegetables production: In the study area both male and female members participate in summer vegetables production. The income of women from summer vegetables production were Tk 7682, 11000 and 15660 for low, medium and high income households respectively which constituted 16.19, 12.44 and 12.53 percent of the respective total income households (Table 4). It may be observed that the women of low income households have greater contribution in summer vegetables production.

Table 4. Income from summer vegetables production.

Categories of household	Activities				
	Summer vegetables production		Other activities		Total income (Tk)
	Male	Female	Male	Female	
Low income	4758(10.03)	7682(16.19)	24335(51.28)	10680(22.51)	47455(100)
Medium income	10568(11.95)	11000(12.44)	46506(52.59)	20360(23.02)	88434(100)
High income	18320(14.66)	15660(12.53)	69420(55.54)	21600(17.28)	125000(100)

Figures in the parentheses are percentages

Factors influencing level of households' income: Linear and log linear models were initially estimated for determining the effects of some selected factors on the households' income of different categories of households. But the log linear model was better in terms of expected signs and magnitudes of the co-efficient, R^2 (adjusted) and F-values. So, the parameter estimators obtained from the log linear model were selected for interpretation.

The regression co-efficient of land was 0.362. The co-efficient was significant at 1 percent level of significance. It implies that holding all other variables constant, 1 percent increase in land would to an increase family income by 0.362 percent. The estimated regression co- efficient of female earning member of family was 0.294. The co-efficient was significant at 1 percent level. It indicates that 1 percent increase of female earning members of family would increase family income by 0.294 percent, keeping other factors constant. Education had positive and significant coefficient at 5 % level was estimated 0.318. It indicates that 1 percent increase in education level family income would increase by 0.318 percent (Table 5).

Table 5. Estimated values of co-efficient related statistics.

Selected Variables	Co-efficient	Standard errors	t-value
Constant	2.097	1.361	1.541
Land (X_1)	0.362**	0.112	3.224
Number of female earning member (X_2)	0.294***	0.080	3.665
Education (X_3)	0.318*	0.157	2.032
Family size (X_4)	-0.097	0.113	-0.853
Indebtedness (X_5)	0.162	0.114	1.422
Women income (X_6)	0.060	0.087	0.687
R square	0.720		
Adjusted R Square	0.669		
F-value	14.164**		

** = *Significant at 1 % level*, * = *Significant at 5% level of probability*

The estimated co-efficient of determination (R^2) was 0.720, which implies that 72 percent of the variation in family income was explained by the set of explanatory variables included in the model. The value of adjusted R^2 was 0.669. It indicates that after taking into account the degree of freedom (df), the six explanatory variables included in the model still accounted for 66.9 percent of the variations in the family income. The F-value of the equation was 14.164 which were highly significant at 1 % level of probability implying that all the explanatory variables were important for explaining the variation in households' income in the study area (Table 5).

Women are good partners of the socio-economic development of the country in general and the family in particular. They can contribute significantly to the socio-economic up liftment of the family if proper environment with facilities can be ensured. This analysis showed that women play an important role in vegetables production activities in summer vegetables production operations. Economic pressure is forcing them to break away their traditional roles of housewives into farm or non-farm labours. The potential of women must be tapped for the socio-economic improvement of the families and development of the nation as a whole. Women should be organized and be made aware that they have equal right of participation. NGOs or cooperatives should extend small scale credit for the rural women to boost up vegetable production, livestock and poultry farming in homesteads. Marketing facilities for the homestead products should be strengthened for ensuring remunerative prices. Logistic support such as training facilities, credit facilities, input supply in right time, irrigation facilities, agricultural extension services should be made available for the rural women by the government as well as non-government organizations.

References

Ani S. 2003. Taking farm decision and socio-economic characteristics of rural women farmers in southern ebonyi state Nigeria. Department of Agricultural Economics and Extension, University of Maiduguri, Maidugun, Nigeria.

Chowdhury N. 2009. Participation of rural women in farm and non-farm activities: An economic analysis. MS Thesis. Department of Agricultural Economics, BAU, Mymensingh, Bangladesh.

Das N. 2008. Information needs of farm women of Assam related to cultivation of vegetable crops. Department of Extension Education, College of Home Science, Assam Agricultural University, Jorhart, Assam, India.

Gill M S and Walla. 2007. Participation of women in decision making in Agriculture in south-western Panjab. Department of Agronomy, Punjab Agricultural University, Ludhiana, India.

Rani U. 2005. Gender and non-farm employment. Gunarat Institute of Development Research, Ahmedabad, India.

Ritu A. 2007. Women farmers in China's commercial agrarian economy. Department of Family Resources Management, B. C. University of Agriculture, China.

Ritu J. 2004. Women involvement in farm and home activities a role analysis. Department of Family Resources Management, C. S. A. University of Agriculture and Technology, Kampur, India.

Sultana S. 2003. An economic analysis of women participation in farm and non-farm activities in some selected areas of Mymensingh district. MS Thesis. Department of Agricultural Economics, BAU, Mymensingh, Bangladesh.