

Gender Participation in Cauliflower Seed Production at Sadar Upazila of Tangail District in Bangladesh

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ABSTRACT

The purpose of the study was to ascertain gender participation, particularly proportionate involvement of male and female in cauliflower seed production and also to identify the relationship between the selected characteristics of the farm households and their participation in cauliflower seed production in four intensive cauliflower seed producing villages of Sadar Upazila under Tangail District. A sample size of 70 respondents were interviewed by using an interview schedule. The study reveals that women played a significant role in cauliflower seed production along with their male counterparts. However, there were variations in participation in different activities performed for the production of cauliflower seed. A clear gender specific division of labor existed in farm families. Women were more involved in less laboring activities, such as gap filling, plant protection, scooping, drying and storage. While men were mostly involved in land preparation, manure and fertilizer collection and application, transportation in the field and weeding and mulching. A varied level of male-female joint involvement was observed. Involvement of women was minimum in land preparation while least involved in seed storage. Women's participation in different activities of cauliflower seed production increased with the decrease of family size, farm size, annual income and educational level of the family head of the farm households.

Key words: Gender participation, cauliflower, seed production.

INTRODUCTION

Rural women in Bangladesh perform different framing activities in and around homestead in addition to their traditional role of house keeping, reproduction and child rearing (Ali, 1980). Gender is a term that captures the socially defined differences between men and women. It refers to socially determined roles, responsibilities and expectation from men and women but not the biological difference. Gender affects involvement in different types of works by men and women in farming depending on social system, local customs and religious influence. In rural societies women have many roles to play as wife, mother and agricultural producer. Vegetables constitute the major part of our food ration, which are grown mostly in and around homestead in Bangladesh. The homestead based agricultural system is basically the domain of female members of households. Women's work is often specific and different from their male counterparts. They also work jointly with their husbands or other family members. Cauliflower (*Brassica oleracea*) is one of

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the most important and popular winter vegetable crops of Bangladesh. The area under this crop is increasing rapidly and the farmers are gradually adopting it as a cash crop. In 1997-98, the area and curd production of cauliflower were about 10300 ha and 80000 metric tons respectively (Anonymous, 2000). Seed production of early and medium maturity groups of the tropicalized varieties is possible during winter season in Bangladesh. The usual method is to leave the plants with good curd in the field which later produce flower stalks and flowers and the seed ripens in March & April. Seed is the key input of crop production. For a long time, cauliflower seed is produced in few villages under Sadar Upazila of Tangail District. The farm families get benefited from a good income from the sale of seed as well as seedling. Along with their male counterparts, females also take an active part in cauliflower seed production. But there is very little or dearth of information on this particular issue since no attempts have so far been made to understand the extent of participation of men and women and related issues were not fully addressed from gender perspectives. Considering the above views, the study was undertaken with the following objectives:

1. To describe the socio-economic profile of the farm households involved in cauliflower seed production.
2. To determine gender participation i.e., proportionate involvement of male and female in different activities for the production of cauliflower seed production.
3. To explore the relationship between the selected characteristics of the farm households and the gender participation in cauliflower seed production.

METHODOLOGY

The study was conducted in four villages of Gala Union under Sadar Upazila of Tangail District. The villages were Pachbikramhati, Aabikramhati, Rabna and Enayetpur. An updated list of 233 farm households producing cauliflower seed were prepared with the help of the Block Supervisors (BSs) presently known as Sub Assistant Agriculture Officers (SAAOs) from four villages. These farm households were considered as the population of the study. A sample size of 70 was taken from the four villages following a proportionate simple random sampling technique. The entire process of data collection took 30 days from March to April 2002.

The dependent variable of the study was gender participation in cauliflower seed production. It required different activities from seedling raising to production and storage of seed. For each of the activities, a simple percent count was done of labor contribution in different activities by the family members and hired labors based on the responses during the survey.

The independent variables of the study such as education, family type, family size, farm size and annual income of the farmers were measured by putting numerical scores. For measuring education, a score of 1 was assigned to a respondent for each year of schooling. A respondent who could not read and write fall under illiteracy criteria having a score of 0. Family size was operationally measured by assigning a score of one (1) for each member of the family who jointly lived and ate together. Farm size referred to the hectarage of land area devoted to the maintenance of farming enterprise(s) by a respondent. Annual income of a respondent was determined on the basis of his total earnings from agriculture, service, business and other sources.

RESULTS AND DISCUSSION

Selected socio-economic characteristics of the respondents

Majority of the respondents (about 73%) of the study area had primary level of education and about 14% were illiterate (Table 1). A large number of farm households (about 63%) had nuclear type of family and the rest (37.1%) had joint family. The traditional structure of joint family in the rural areas is on the verge of disintegration due to economic hardship, change in value and gender roles. It was clear that the average family size of the respondents were 6.56. Sixty percent of the respondents had medium size family having 4 to 6 members and 35% large families with 7 and above members. Most of the respondents (60%) were small farmers having 0.20 to 1.00 ha of land followed by medium farmers (about 25%) with an average of 0.93 ha of land. Majority (51.4%) of the respondents of the study area fell in the low-income group who earned less than 45000 taka per annum.

Table 1. Socio-economic characteristic profile of the respondents

Variables	Measurement	Range	Categories	Respondent (%)	Mean	S.D.
Education	Scoring	0-11	Illiterate	14.3	2.93	2.44
			Primary level	72.9		
			Secondary and above	12.8		
Family type	Scoring	NA	Nuclear	62.9	NA	NA
			Joint	37.1		
Family size	Scoring	3-16	Small (less than 4)	1.4	6.56	2.97
			Medium (4-6)	62.9		
			Large (7 and above)	35.7		
Farm size	Scoring	0.04-3.64 ha	Marginal (0.02-0.20 ha)	11.4	0.93 ha	0.85 ha
			Small (0.20-1.00 ha)	60.0		
			Medium (1.00-3.03 ha)	25.7		
			Large (> 3.03 ha)	2.9		
Annual income	Scoring	18000-104000	Low (< Tk 45000)	51.4	53242.86	26407.31
			Medium (Tk 45000-90000)	35.7		
			High (> Tk 90000)	12.9		

Participation of family members and hired labors in the production of cauliflower seed

During survey it was found that beside household members (husband, wife and children), hired labors (both male and female) were also involved in cauliflower seed production. Male and female members of farm households did not work separately at all times. They were also found working together. Activities those were dominated by joint participation of husband and wife include seedling raising, gap filling, irrigation, plant protection and post harvest activities (Table 2). To some extent children were also involved in different activities. The involvement of wife was higher in seed storage, seed drying, plant protection, gap filling, threshing, scooping, and irrigation, while husband was more involved in seedling raising, land preparation, transplantation and weeding and mulching (Table 2). Children were found to assist mostly in irrigation, gap filling, threshing and seed drying. Male hired labors were mostly engaged in seedling raising, land preparation, manures and fertilizer application, transplantation and weeding and mulching. Women worked as hired labors mainly for roughing and scooping.

Table 2. Percent distribution of labor contribution in different activities by family members and hired labors

Types of activities	Activities done by (%)					
	Husband	Wife	Husband & wife jointly	Children	Male hired labor	Female hired labor
Seedling raising	27.50	20.79	19.00	13.00	18.29	1.42
Land preparation	36.43	4.34	2.57	13.37	41.86	1.43
Manure & fertilizer collection/ application	29.44	16.64	13.35	11.79	22.86	5.50
Transplantation in the field	29.44	16.14	15.14	10.43	23.71	5.14
Gap filling	20.49	31.86	21.86	16.64	5.86	3.29
Weeding and mulching	31.93	8.71	8.00	11.71	34.22	5.43
Irrigation	19.71	30.64	21.86	18.79	5.00	4.00
Plant protection measures	17.72	39.00	22.00	15.00	2.57	3.71
Scooping	25.71	30.71	20.93	5.08	8.71	8.86
Rouging	26.48	26.14	20.64	7.71	8.86	10.17
Harvesting	25.50	26.57	22.50	14.79	5.07	5.57
Threshing	19.43	32.38	21.69	15.50	5.00	6.00
Drying	14.43	41.43	21.14	16.50	1.71	4.79
Seed storage	12.56	50.29	24.00	7.86	0.86	4.43

Relationship between socio-economic characteristics of the farm household and gender participation in cauliflower seed production

Relationship was explored for both men's and women's participation by simple correlation analysis and shown in Table 3. Women's participation in seedling raising had negative significant relationship with all the five selected socio-economic characteristics of the farm households (Table 3). This indicates that women from educated, large and rich farm families who have got high social status but spent less amount of time in seedling raising. They are economically sound and engage hired labor who are mostly male. Sangwan *et al.* (1990), Shah *et al.* (1994) and Anwar *et al.* (1994) found the similar types of result. On the other hand all the five selected characteristics had positive significant relationship with men's participation in seedling raising. It can be concluded that with the increase of income and farm size, male labor contribution was increased. This might be due to the fact that the large and rich farm families engaged more hired labor who were mostly male, while small and marginal farmers tried to use family labors particularly women as much as possible. Women's participation in manure and fertilizer application had negative significant relationship with education and farm size (Table 3). Utilization of female labor in the family very much depends on the decision of the family head. Educated family heads do not allow women to be involved in manure and fertilizer collection/application. Female labor contribution decreased with the increase of farm size. A similar type of result was also obtained by Anwar *et al.* (1994). In case of male, farm size and annual income had positive significant relationship (Table 3). Families with large farms and high income possibly engaged more hired labors in manure and fertilizer application/collection who were mostly male. Women's participation in transplantation in the field had negative significant relationship with education, farm size and annual income (Table 3). This indicates that the female involvement decreased with the increase of education, farm size and annual income of the farm households. Similar types of results were also obtained by Shah *et al.* (1994). On the other hand from Table 3 it was indicated that men's participation in transplantation in the field had no significant relationship with any one of the independent variables. Empirical data showed that women were more involved in filling gaps than men as it had negative significant relationship with all the independent variables except family type (Table 3).

Table 3. Correlation co-efficient (r) of gender participation in different activities of cauliflower seed production activities and their selected characteristics

Activities	Correlation value of 'r'									
	Education		Family type		Family size		Farm size		Annual income	
	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men
1. Seedling raising	-.275*	.237*	-.455**	.584**	-.480**	.598**	-.511**	.683**	-.658**	.687**
2. Land preparation	-.085	.011	.149	.098	-.010	.138	-.018	.060	-.001	.065
3. Manure & fertilizer applicator	-.314**	.143	-.049	.136	-.010	.183	-.312**	.298*	-.232	.280
4. Transplantation in the field	-.290*	.167	-.232	.086	-.225	.192	-.314**	.151	-.288*	.158
5. Gap filling	-.306*	.279*	-.189	.172	-.295*	.155	-.331**	.202	-.410**	.261*
6. Weeding and mulching	-.417**	.292*	.021	.003	.059	.102	-.098	-.005	-.244*	.221
7. Irrigation	-.325**	.407**	-.227	.337**	-.255**	.361**	-.255**	.358**	-.340**	.408**
8. Plant protection measures	-.359**	.444**	-.191	.234	-.319**	.286*	-.373**	.185	-.482**	.350**
9. Scooping	-.079	.193	-.296*	.320**	-.271*	.338**	-.351**	.338*	-.394**	.320**
10. Rouging	-.162	.224	-.262*	.347**	-.284*	.310**	-.289*	.481**	-.354*	.360**
11. Harvesting	-.241	.212	-.171	.139	-.202	.192	-.168	.131	-.205	.126
12. Threshing	-.068	.344**	-.157	.205	-.188	.291*	-.140	.146	-.239*	.284*
13. Drying	-.065	.345**	-.157	.045	-.188	.136	-.140	.047	-.369**	.158
14. Seed storage	-.021	.014	-.113	.151	-.160	.277	-.178	.237	-.172	.238

** Correlation is significant at the 1% level

* Correlation is significant at the 5% level

Women's participation in weeding and mulching had significant relationship with education and annual income (Table 3). Educated family heads don't allow women to get involved in weeding and mulching. Families having higher income employ male hired for weeding and mulching. Table 3 showed that men's participation in weeding and mulching had positive significant relationship with only education. Educated farmers preferred male labors to do weeding and mulching rather than to involve female members. Women's participation in irrigation had negative significant relationship with all the independent variable except family type (Table 3). Ahmed *et al.* (1990), and Isvilanonda and Wattanudcharia (1994) also found similar result. But participation of men in irrigation had positive significant relationship with all five selected characteristics of the farmers according to Table 3. It indicated that solvent large farmers utilized more male labor while small and marginal farmers used female labor within the family as much as possible. Table 3 suggested that women's participation in plant protection had negative significant relationship with all the selected five characteristics except family type. However, men's participation had positive significant relationship with education, family size and annual income (Table 3). Women's participation in scooping had negative significant relationship with all independent variables except education. Similarly men's participation had positive significant relationship with all selected variables except education. Female involvement was reduced with the increase of family size, farm size and annual income as the large and solvent farm families engaged hired labor who were mostly male. In an extended family, more male labor is available to carry out the activities. Isvilanonda and Wattanudcharia (1994) also obtained similar type of result. Education showed negative significant relationship with women's participation in harvesting (Table 3). Educated family heads possibly did not allow women to be involved in harvesting. According to Table 3 men's participation in harvesting had no significant relationship with any of the five selected variables. Men's involvement was essential in harvesting and participation did not depend on socio-economic characteristics. It was found from Table 3 that annual income of the farm households showed negative significant relationship with women's participation in seedling raising, transplantation, gap filling, weeding and mulching, irrigation, plant protection measures, scooping, rouging, threshing and drying although all these variables showed positive significant relationship with men's participation. It indicated that the solvent families were able to engage hired male labor for drying of seed pods of cauliflower's. Women's participation in seed storage had no significant relation with any of the characteristics (Table 3) as seed storage was mostly done by women and did not depend on any socio-economic characteristics. Whereas according to Table 3 men's participation had positive significant relationship with family size and farm size. Bigger families and large farmers either used available male labor within the family or engaged male hired labor for seed storage.

CONCLUSIONS

On the basis of the above findings it can be concluded that, women played a significant role in cauliflower seed production along with their male counterparts. A clear gender specific division of labor existed in the farm families. Women were more involved in less laboring activities like gap filling, plant protection, scooping, drying and seed storage; while men were mostly involved in land preparation, application of manures and fertilizer, transplantation, weeding and mulching. A varied level of male-female joint involvement was observed in cauliflower seed production. Involvement of female was minimum in land preparation while men were least involved in seed storage. Women's participation in cauliflower seed production increased with the decrease of family size, farm size, annual income and education. Female labor contribution in different activities was higher in nuclear families than those of the extended families.

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M. E. Haque *et al.*

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