

## **Homestead Vegetable Cultivation by the Rural Women: Problem, Prospect, and Recommendation**

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**Abstract:** The major purpose of this research was to determine rural womens' problems and prospects of homestead vegetable cultivation. The study was conducted in five villages of Nabinagar upazila under Brahmanbaria district. A structured interview schedule was used for data collection. Appropriate scales were developed in order to measure the variables. Descriptive statistics such as mean, standard deviation, range and percentage were used to describe the variables under consideration. Among the ten selected problem 'lack of credit' was ranked first followed by 'lack of technical knowledge', 'insect and disease infestation', 'higher price of inputs', 'lack of quality seeds and seedlings', 'cattle and goat destroy the vegetables' 'lack of homestead land', 'lower fertility of homestead land' and 'lower market price of products'. Lack of required information in time' was identified as other major problems which also hinder the homestead vegetable production. Hence, it may be recommended that, Department of Agricultural Extension (DAE) and other agriculture related organizations should organize necessary training and skill development program like training on vegetable cultivation, fertilizer application etc. so that the rural women could increase vegetable cultivation in their homestead as well as can increase their family income.

**Keywords:** Homestead vegetable; cultivation; problem; problem index; women; agriculture; Bangladesh.

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### **1. Introduction**

Bangladesh is one of the most densely populated countries in the world with an estimated average population density of around 1141 inhabitants per square kilometer (Population and Housing Census 2021). Due to this, majority of its population particularly women and children suffer from severe malnutrition.

Bangladesh is an agricultural country and the economy is largely reliant on agriculture. Bangladeshi women play a significant part in agriculture production. Although rice is the dominant crop, vegetable occupy a very important place in rice-based cropping systems and play a distinct role in the crop sub-sector to provide nutrition, enhance food security and uplift economic benefits to the producers. Vegetables are essential in diet, provide fiber, trace minerals, vitamins, carbohydrates and proteins. Vegetables help to prevent various diseases resulting from malnutrition and unbalanced nutrition. Over 30 thousand infants become blind every year due to vitamin 'A' deficiency (BARC, 1990). Homestead gardening can play a very important role to improve the nutrition level

in the country which is almost overlooked by producing vegetable. In Bangladesh a good number of vegetables are grown throughout the year. In view of increase in income, population and nutritional consideration, there is a great need for vegetable cultivation.

In contrast weather, climate and soil of Bangladesh are very much suitable growing vegetables round the year. But vegetable production is so low that per capita/day availability is hardly 112 gm whereas the requirement is estimated to 400 gm. (FAO, 2003).

Many vegetables are grown in homestead. Homestead is the dwelling place and it is the center where vegetables are cultivated. Homestead as defined by Abdullah (1986) is the land owned and occupied by the dwelling unit of the household and immediate area surrounding by the dwelling unit including courtyard, pond, road space around homestead, space used for cultivation of trees and vegetable and unutilized space.

In Bangladesh out of 8.52 million hectare cultivated land, 0.03-million-hectare land (about 5 percent) is under homestead while average individual homestead covers 0.04 hectare. Nearly 4.9 million household (30 percent) are non-farm out of total 18 million households. About 70 percent of 10 million farm households have below one hectare land (small farm) (BBS, 2011). Thus, homestead farming is the most significant system of production in rural Bangladesh.

In Bangladesh women are not habituated generally in working outside and their movement is mostly restricted to the homestead area (FSRDP, 1990). Halim (1987) reported that the women are potential producer of the agricultural product and through their participation in intensive agricultural production they increase the GDP coming from agriculture.

As of the 2021 Bangladesh census, women constitute nearly half (49.47%) of the total population and 80% of them live in the rural areas (AIS, 2004). Approximately 45% of our rural people are landless and about 55% of the land owners are small farmer. Women from these landless and marginally landless rural families cultivate different kinds of vegetable. Undoubtedly, women can play a vital role if their full talent can be explored. If women can perform their roles in homestead vegetable cultivation properly and skillfully, they will be able to ensure food security and family nutrition, increase family income and contribute to the overall improvement of Bangladesh.

Based on this scenario, the study is designed to find out the outermost problem faced by the rural women in homestead vegetable cultivation and the possible implications.

## 2. Materials And Methods

The study was conducted at Solimgonj union under Nabinagar upazila of Brahmanbaria district. Out of nine villages, five villages in Solimgonj were selected randomly. The selected villages were Badda, Bande Baher Char, Barail, Nilokhi, Kadoir (Figure 1). The rural women of the selected five villages were considered as the population of the study. A list of rural women who are currently cultivating homestead vegetable was prepared with the help of Sub Assistant Agriculture Officer (SAAO) of the respected agricultural office. The number of rural women of the selected five villages was 594 which constituted the population of the study. About 20 percent of the population was selected proportionally from the selected villages as the sample by following random sampling method. Thus, the total sample size stood at 120. Data were collected with the help of a pretested structured interview schedule during the period from 18May 2021 to 28 May, 2021. Moreover, a reserved list of 13 rural women was prepared for use when the rural women under sample were not available during data collection. Problems of homestead vegetable cultivation were the main focus of the study.



Figure 1: A map of Nabinagar upazila showing the study area

Extent of problems was measured by computing the extent of various problems of the farmers with 10 selected items as shown below-

1. Lack of credit
2. Lack of technical knowledge
3. Insect and disease infestation
4. Higher price of inputs

5. Lack of quality seeds and seedlings
6. Cattle and goat destroy the vegetable
7. Lack of homestead land
8. Lower fertility of homestead land
9. Lower market price of products
10. Lack of required information in time

Each respondent was asked to indicate the extent of his/her problem as very high problem, high problem, medium problem, low problem, and no problem at all and score was assigned as 4, 3, 2, 1 and 0 respectively. The problem faced score of a respondent was determined by summing up his/her scores for all the problems. To determine the rank order of the identified problems, Problem Faced Index (PFI) for each problem was measured using the following formula:

$$PFI = (P_4 \times 4) + (P_3 \times 3) + (P_2 \times 2) + (P_1 \times 1) + (P_0 \times 0)$$

Where,

PFI= Problem Faced Index

P<sub>4</sub> = No. of the respondent faced very high problem

P<sub>3</sub> = No. of the respondent faced high problem

P<sub>2</sub> = No. of the respondent faced medium problem

P<sub>1</sub> = No. of the respondent faced low problem

P<sub>0</sub> = No. of the respondent faced no problem

As there were 120 respondents, so Problem Faced Index (PFI) could range 0-480. Where 0 indicated no problem and 480 indicated very high problem.

### 3. Results and Discussion

The different parameters related to personal information was gathered in Table 1. The age of the rural women ranged from 22 to 58 years, average age was 34 years, mostly were young aged women. Women of old age were rarely found there.

Educational qualification of the rural women ranged from only the signing capacity to higher secondary level. The family size of the respondent was 4 to 9, average 5.64. The findings indicated that a large proportion of (94.1 percent) the rural women were medium family to small family. Farm size of the rural women ranged from 0.04 to 2.20 hectares and the average was 0.70 hectares. Family income of the respondents ranged from 58.50 to 241.20 with a average of 127.19. The highest proportion of the respondent (61.7 percent) had medium income while 32.5 percent had low income and only 5.8 percent had high income. In fact, the overwhelming majority of the respondent (94.2 percent) women of the study area constituted medium to low-income categories. Knowledge score ranged from 10 to 27 against the possible range from 0 to 30. The average was 17.01. The majority (64.2 percent) of the women had medium knowledge regarding vegetable cultivation compared to 20 percent had high knowledge of homestead vegetables cultivation and 15.8 percent of the respondent women had low vegetable cultivation knowledge. The observed extension contacts scores of the rural women ranged from 9 to 34 against the possible range from 0 to 45, the average was 17.65. The respondent women of the study area had medium extension contact compared to 14.2 percent of the respondents had low extension contact. Only 3.3 percent of the respondent women of the study area had high extension contact. The findings of the study also indicated that overwhelming majority (96.7) percent of the respondents had medium and low extension contact for getting necessary agricultural information. Extension contact is a very effective and powerful source of receiving information about various new and modern technologies. The observed training exposure score of the rural women ranged from 0 to 6 with a mean of 1.91. The highest proportion (64.2 percent) of the respondents was having low agricultural training exposure compared to 20 percent of them having no agricultural training. Only 15.8 percent had medium agricultural training. Training increases knowledge and skills of the rural women in a specific subject matter area. Individuals who gain medium agricultural training are likely to be more competent in performing in different activities. But the fact that rural women who received no training, need attention of the authorities of extension services (GOs and NGOs) in the country. Providing adequate training on appropriate subject matter is likely to increase the knowledge of the rural women.

Table 1 Salient features of the selected Characteristics of the Rural

Parameters	Mean	Standard Deviation	Minimum	Maximum
Age	34	8.28	22	58
Level of education	7.29	3.13	0.5	12
Family size	5.64	1.28	4	9
Family income	127.19	44.70	58.50	241.20
Farm size	0.70	0.40	0.04	2.20
Knowledge of homestead vegetable cultivation	17.01	3.69	10	27
Extension contacts	17.65	4.55	9	34
Agricultural training	1.91	1.69	0	6

N.B. Landless= 0-49 deci (0.20 ha), Small= 50-150 deci (0.21- 0.60 ha), Medium= 151-499 deci (0.61-2 ha) and Large < 500 deci (2 ha) (M. A. Islam, 1998).

The observed problem faced index of the selected ten problems in homestead vegetable cultivation ranged from 150 to 386 against the possible range of 0 to 480. The severity of the problems was arranged in rank order according to the descending order of problem faced index (PFI) as shown in Table 2.

Table 2. Problem Faced Index of selected problem of the respondent in homestead vegetablecultivation

Sl. No.	Problems	No. of Rural women					PFI	Rank Order
		Very high	High	Medium	Low	Very Low		
1.	Lack of credit	42	68	4	6	0	386	1
2.	Lack of technical knowledge	5	76	34	5	0	321	2
3.	Insect and disease infestation	11	45	62	2	0	305	3
4.	Higher price of inputs	1	46	70	3	0	285	4
5.	Lack of quality seeds and seedlings	10	12	84	14	0	258	5
6.	Cattle and goat destroy the vegetable	0	13	83	23	1	228	6
7.	Lack of homestead land	4	9	48	51	8	190	7
8.	Lower fertility of homestead land	0	4	47	69	0	175	8
9.	Lower market price of products	1	3	37	79	0	166	9
10.	Lack of required information in time	2	3	19	95	1	150	10

Data contained in Table 2 indicates that lack of credit ranked first as severe problem. Lack of technical knowledge were very important constraints for vegetable production. Every year severe Insect and disease infestation occurs at homestead gardens and the loss is unneglectable. For these Insect and disease infestation ranked the third problem.

Higher price of inputs discourages the rural women to continue the home gardening. Lack of quality seeds and seedlings hinder the quality production of vegetables.

Sometimes cattle and goat destroy the vegetable for this the predicted amount of production is not possible. Lack of homestead land is the big challenge for the rural women for homestead vegetable cultivation. Lower fertility of homestead land is another concern for home gardening. Market price is an important factor for vegetable cultivation. If the market price is not stable throughout the seasons, desired profit cannot be achieved. But in reality, the market price does not often remain stable. It fluctuates depending upon the supply and demand of vegetable and artificial control of market by brokers and other vested interest groups. Rural women after harvesting took the vegetable in the market but they did not get good expected price thus, they become disheartened. However, low price of vegetable in pick period ranked the ninth problem.

#### **4. Conclusion**

Credit availability needs to be increased for the rural women. Creation of a cooperative society among the rural women can provide easy access to the credit as well as can help them to successfully distribute their production and get fair prices of products. Insect and disease infestation was also bulging. Therefore, the agricultural office, various NGO's and insecticide and pesticide vendors could come through to solve this problem by giving the rural women those appropriate measures to control insect and pest in their homestead vegetable cultivation area. If proper technical supports were given to the rural women, then it will become very popular day by day and will increase the socio-economic status of the rural women of the village. As a highly potential economic sector, proper attention to mitigate the problem of the women of the rural area of Bangladesh is urgently needed. Help from different experts such as biologists, veterinarians, zoo technicians, agronomists or even officials of the Bangladesh government (e.g., Ministry of Agriculture or Ministry of Fisheries and Livestock, extension department) and NGOs should provide to the rural women of the study region. Nonetheless, knowledge-based orientation training program for the rural women are also suggested.

#### **5. Recommendations**

Homestead vegetable cultivation is an important source of nutrients that make diets for human beings more balanced and also a good earning source for the family. So, it may be recommended that GOs and NGOs should take necessary motivational program specially to small and medium farm sized rural women so that they can cultivate more vegetables in their homestead. Although, rural women have been very positive to extension contacts. Therefore, it may be recommended that, DAE and other agriculture related organizations should take necessary steps to enhance their extension contact with the rural women by providing necessary guidelines and technical help. Due to social system and religion, sometimes rural women are reluctant to come in contact with male extension worker. Subsequently, more women extension worker should be employed to make personal contact along with other enhance group and mass media. Hence, it may be recommended that, DAE and other agriculture related organizations should organize necessary training and skill development program like training on vegetable cultivation, fertilizer application etc. so that the rural women could increase vegetable cultivation in their homestead as well as can increase their family income. Extension workers must be well trained on the newly released vegetable cultivation practices/techniques as well as the running techniques to fit them as a credible source of information about the techniques and to make them skilled to implement/ solve any problem of the rural women.

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