

**INVOLVEMENT OF RURAL WOMEN IN HOMESTEAD VEGETABLE
CULTIVATION IN A SELECTED AREA OF BADARGANJ UPAZILA
UNDER RANGPUR DISTRICT**

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BY

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A Thesis

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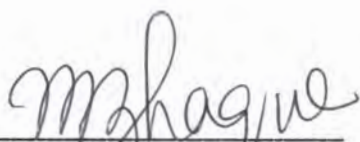
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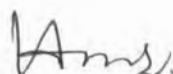
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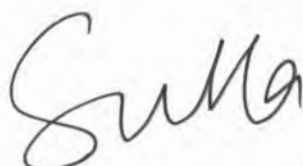
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CERTIFICATE

This is to certify that the thesis entitled, “**INVOLVEMENT OF RURAL WOMEN IN HOMESTED VEGETABLE CULTIVATION IN A SELECTED AREA OF BADARGANJ UPAZILA UNDER RANGPUR DISTRICT**” submitted to the Faculty of **AGRICULTURE**, Sher-e-Bangla Agricultural University, Dhaka, in partial fulfillment of the requirements for the degree of **MASTER OF SCIENCE IN AGRICULTURAL EXTENSION** embodies the result of a piece of bona fide research work carried out by **MD. MOSTAFIZUR RAHMAN**, **Registration No. 26274/00557** under my supervision and guidance. No part of the these has been submitted for any other degree or diploma.

I further certify that any help or source of information, received during the course of this investigation have been duly acknowledged.

Dated :

Dhaka, Bangladesh

(Prof. M. Zahidul Haque)
Supervisor



Dedicated to my Father

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INVOLVEMENT OF RURAL WOMEN IN HOMESTEAD VEGETABLE
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ABSTRACT

The focus of the study was the involvement of rural women in homestead vegetable cultivation in Badarganj upazila of Rangpur district. The objective of the study were to (i) assess the extent of involvement of rural women in homestead vegetable cultivation, (ii) explore the relationship between the selected characteristics of the rural women and their involvement in homestead vegetable cultivation, (iii) assess the problems faced by the rural women to undertake homestead vegetable cultivation.. Data were collected by using interview schedule during 25th January to 25th February 2006. Majority (66%) of the respondent had medium involvement with homestead winter vegetable production as compared to 29% percent having low and 5 percent high involvement. The highest proportion (68%) of the respondents had medium involvement in homestead summer vegetable production as compared to 28 percent low and 4 percent had high involvement. The majority (67%) of the respondents had medium involvement with overall homestead vegetable production as compared to 24 percent low and 9 percent high involvement. Correlation analysis indicated that among the respondents selected characteristics, family size was no relation with each of their winter, summer and overall homestead vegetable cultivation. Farm size had no relationship with winter vegetable cultivation but had positive relationship with summer and overall vegetable production. Age, education, knowledge on homestead vegetable cultivation, annual family income, farm size and communication exposure were positively related with each of their winter, summer and overall homestead vegetable cultivation. Among the selected 12 problems, the top most three problems according to rank order were “lack of quality seeds and seedlings”, “do not get due market price” and “disease and insect infestation”.

CHAPTER I

INTRODUCTION

1.1 General Background

Women' s involvement in rural development, more particularly in agricultural development in Bangladesh, is the most important strategy designed to improve the social and economic life of specific group of farming community. Undoubtedly, involvement provides various benefits of development to the target groups who seek a livelihood in the rural areas. The basic aim of the Government of Bangladesh (GOB) is to raise farm productivity and family income for socio-economic welfare of the society for which it is intended to.

Homestead is the dwelling place and it is the centre where all of vegetables and quick growing fruits are cultivated. Homestead as defined by Abdullah (1986) is the land owned and occupied by the dwelling unit of the house hold and immediate area surrounding by the dwelling unit including courtyard, pond, road space around homesteads, space used for cultivation of trees and vegetables and unutilized space. In Bangladesh, about eighty five percent of the people live in rural areas. Moreover, a unit number (approximately 45%) of our rural people are landless and about 55% of the land owners are small farmer.

Women of these landless families cultivated different kinds of vegetables, fruits and earn money more than medium and large family (Halim, 1991). This income may meet a part of house hold expenditure for an average of 5.5 member family size (Anonymous, 1991).

The vegetables play a very important role in human nutrition as sources of minerals (Iron, calcium etc.) and different vitamins which are not found in adequate quantities in other food items. Vegetables, if taken in proper combination, will not only supply carbohydrate and protein but also minerals and vitamins. This will greatly help to prevent various diseases resulting from malnutrition and unbalanced nutrition. Many vegetables are grown in homestead such as cabbage, cauliflower, carrot, egg plant , tomato radish, sweet gourd, wax gourd, teale gourd, pointed gourd etc. Not much care is taken for growing these vegetables in Bangladesh. Little attention is given for cultivation of these vegetables, these are very important source of human nutrition. There is a great scope for increasing the production of vegetables throughout the year.

Bangladesh is an agricultural and the most densely populated country having 141.8 million of people in its 1,47,570 sq km of area (UNICEF 2006). Again the addition of population per year is 1.8 million with an annual growth rate of 2.1 percent (UNICEF, 2006). As a result the increase of homestead at present is not able to keep pace with the growing population. Most of the homestead area are not utilized properly. So, the production of vegetables are not increasing as they need. As a result we don't get the required nutrient from vegetables which protect us from various diseases. For this reason, most of the people of our country are suffering from malnutrition. Vegetables can be cultivated easily by the women, at present 49 percent of village women cultivate vegetables (BBS, 2002). So, there is a great scope to overcome from malnutrition by involving women in homestead vegetable cultivation. Because women are performing better than men specially in homestead vegetable cultivation. Farooq (1980) reported that women productivity ranged from 10 to 14 a day compared to men such hour from 9 to 12. It can be apprehended that some of these time of the women are involved in vegetable cultivation.

From the above discussion, we can say that women can play an important role to fight against malnutrition and to boost up economic development specially both from economic and nutritional point of view. The researcher became keenly interested to conduct an investigation on involvement of rural women in homestead vegetable cultivation..

1.2 Statement of the problem

With a view to conduct an investigation on various aspects of homestead vegetable cultivation, the researcher undertook this piece of study entitled "Involvement of Rural women in Homestead Vegetable Cultivation in a Sleeted Area of Badarganj upazila under Rangpur District". The purpose of this study was to know the answer of the following question :

1. What was extent of involvement of rural women in homestead vegetable cultivation ?
2. What were the characteristics of the rural women ?
3. What were the relationship between the selected characteristics of the rural women and their involvement in homestead vegetable cultivation ?
4. What problems were they facing to undertake homestead vegetable cultivation ?

For getting answer of the above questions the researcher selected the following objectives of the study.

1.3 Specific objectives

1. To asses the extent of involvement of rural women in homestead vegetable cultivation.

2. To determine and describe some selected characteristics of farmers. The selected characteristics were:
 - i. Age
 - ii. Education
 - iii. Family size
 - iv. Knowledge of homestead vegetable cultivation
 - v. Annual family income
 - vi. Farm size
 - vii. Communication exposure

3. To explore relationship between the selected characteristics of rural women and their extent of involvement in homestead vegetable cultivation .

4. To asses the problem faced by the rural women in homestead vegetable cultivation.

1.4 Justification of the study

Homestead vegetable cultivation has been a common practice from time immemorial in Bangladesh. Vegetable cultivation has been going on sporadically activities. Women's involvement in homestead vegetable is an on-going practices. But adequate research has yet not been focused in this area of study. Although there are few studies based on few parameters but not all the socio-demographic characteristics were included elaborately. Regarding the vegetable intensified area, Gopalpur union of Badargonj upazila plays an important role. Gopalpur contributes to a lion' share of vegetable cultivation in meeting the local demand as well as facilitating vegetable marketing of Rangpur and part of Dhaka district. But this large portion of vegetable comes through the involvement of the women at their homestead. So, there is a need for analysis of the various characteristics of

women involved in homestead vegetable cultivation. A broad based analysis could serve as a guideline for planners in formulating new strategies for the women involved in homestead vegetable cultivation. Further this study would help the NGOs policy makes and extension workers in taking a package program to accelerate the existing plans for increasing vegetable cultivation this part of the country.

1.5 Scope and limitations of the study

Considering time, money and other resources and also to make the study meaningful and manageable, the researcher had to impose certain limitations as mentioned bellow :

1. The study was confined to a selected area i.e. two villages of Badarganj upazila under Rangpur District.
2. There were many rural women in Gopalpur union but only 100 respondents who involved in homestead were considered for this study.
3. These study included two types of vegetables which can be grown in homestead area, viz. i) Winter vegetables and ii) Summer vegetables.
4. Only 10 operations and cultivation of 8 vegetables were selected under each of the activity for measuring extent of involvement.
5. Only the housewives of male headed family were considered as respondents of the study.
6. There were many characteristics of the housewives but only nine of them were selected for this study.
7. The researcher had to depend on the data furnished by the selected respondents.

Findings of the study will be particularly applicable in a selected area of Badargonj upazila under Rangpur district. However, the findings may also have application for other areas of Bangladesh where the physical, socio-economic and cultural condition do not differ much from those of study area. Thus, the findings will be helpful to the researcher, planners, policy makers and extension workers for promoting rural development in our country.

1.6 Hypothesis

To test relationship between the rural women involved in homestead vegetable cultivation program and their selected characteristics, a null hypothesis was developed.

The null hypothesis of the study was “ there is no relationship between selected each of the characteristics of the women and their involvement in homestead vegetable cultivation.”

1.7 Assumptions

An assumption is the supposition that an apparent fact or principle is true in the light of available evidence (Gode,1945). The researcher had the following assumptions in mind while undertaking this study :

- i. The respondent rural women of the study area were capable of furnishing adequate information, views and options.
- ii. The responses furnished by the respondent were valid and reliable.
- iii. Information furnished by the respondents included in the sample were the representative of the whole population of the study.
- iv. The researcher personally collected data was well adjusted himself to the social environment of the study area. Hence the data collected from the respondents were free from any biasness and with no hesitation.

Rural women : Rural women referred to the women who live in rural area, aged between 17 to 50 years and engaged in homestead vegetable cultivation.

Respondent : Respondent refer to the women beneficiaries who are involved in homestead vegetable cultivation and are included to the sample .

Age of women : Age is defined as the period of time from the birth of the rural women to the time of interview.

Education : Education refers to the development of desirable knowledge, skill and attitude in the individual through reading, writing and other related activities. It was measured in terms of years of schooling of individual respondent.

Agricultural Knowledge : It refers to awareness of the rural women of farm practices, skills and related information to crop, livestock, fisheries, forestry that commonly known in the rural areas.

Family size : Family size of house hold was defined as the number of individuals in the family including herself, her husband, children and other dependent members who live and eat together.

Family income : Family income was defined as the total earning of the respondent and the numbers of her family from agriculture and other sources (service, business etc.) during a year.

Farm size : It refers to the area of land owned by a farmer or his wife in which farming activities are carried out. A respondent was considered to have full benefit from cultivated area either owned by himself or herself or obtained on borga system the area being estimated in terms of full benefit to the farmer. The right of

a farmer on the land taken on lease from others was regarded as ownership in estimating the farm size.

Knowledge on homestead vegetable cultivation : It referred to the rationalize understanding of the rural women about different activities related to homestead cultivation in the homestead area.

Homestead area : The homestead area for this study was defined as the raised land in which the household had its entire dwelling including living rooms, kitchen, cattle shed, sheep shed, front yard, court yard, and area under vegetables, fruit trees, timber trees, backyard bushes, bamboo bunches etc.

Homestead gardening : Homestead gardening is the place where grows more vegetables to meet the requirements of the family all the year round. Every individual is concerned with homestead gardening. Irresponsible of the fact whether the individual is a villagers or a city dweller, home garden should be a part of his home.

Problem confrontation : Problem means any difficult situation which requires some action to minimize the gap between “What ought to be” and “What is”.

Problem confrontation of the respondent refers to the problem face by her conducting various homestead activities.

Communication exposure : It refers to the frequency of exposure of a rural women to different individual sources, group sources and mass media of information.

CHAPTER II

REVIEW OF LITERATURE

The present study is concerned with the involvement of rural women in homestead vegetable cultivation. This chapter deals with the review of past studies and findings related to the present study. In fact only a few research works have been done regarding involvement of rural women in homestead vegetable cultivation. However, some other literature clearly related to the involvement have been collected and listed below. The literature reviewed were presented in three major sections. In the first section deals with literatures on general context of homestead vegetables cultivation by rural women and the second section contained the relationships between the selected characteristics of rural women and their involvement in homestead vegetable cultivation. The third section dealt with the conceptual framework of the study.

2.1. Review of literature on general context of homestead vegetable cultivation

Sultana (1993) stated that homestead vegetables and fruits from an integral part of the family diet and a part of them enters the commercial market. All through every member of the family has some contribution the major labor input was contributed by women. Most of the homestead agricultural activities, including seed preparation, land preparation, transplanting, watering and harvesting are done by women. Men usually help in fertilizer and pesticide application.

Akanda (1994) in his study found that highest proportion of the rural women had high participation in vegetable cultivation while only 0.5 percent of them had high participation in the cultivation of fruit trees.

Halim *et al.* (1994) reported that in Bangladesh, women produced Indian spinach, amaranths, okra, gourd, cucumber, and pumpkin during summer season and country bean, brinjal and tomato during winter season in their homestead garden successfully.

Islam and Karim (1994) observed in a village of Jessore district, Bangladesh that women participated in vegetable production 20-80 % while men by 20-50% in various farm groups.

Orcherton and Somarriba (1996) stated that some 96% of the farms had home gardens but they occupied only 2% of the total farm area. Home gardens observed and average of 48% of the total manual labor available; Women and girls contributed to over help (29-56) of the family requirements of home gardens. Men mostly dedicated labor to the production of commercial crops (sweet peppers and tomatoes) while women and girls, showed lower (20%) labor participation in the production of there crops. Farm women were highly involved in several agricultural activities traditionally considered as masculine in nature.

Thapa *et al.*(1996) suggested that both hired labor and off-farm income substitute for women's labor in agriculture. Women who have more young children are more likely to be involve in agriculture conversely.

Chowdhury (2000) in his study found that the majority of women fell under moderate participation (43%) of to highly participation (36%) category. Only a few the respondents have opined in favor of less participation (21%).

Kabir (2001) in his study observed a large majority of participation rural women were involved in poultry rearing followed by vegetable. cultivation (65 percent women), cow rearing (36% women), small business (31% women) and fish culture (27% women). The remaining activities were less participated.

Auragozeb (2002) studied on adoption of integrated homestead farming technologies by the rural women in RDRS. He found that the highest proportion (71%) of rural women had high 21% medium and 8% had low integrated homestead farming technology.

2.2 Relationship between the selected characteristics of the rural women and their involvement in homestead vegetable cultivation.

2.2.1 Age and involvement

Shah, *et al.* (1994) observed that the age of rural women was negatively related to increase the extent of their participation.

Akanda (1994) revealed in his study that age of the rural women had significant positive relationship with their participation in the utilization of homestead vegetable and fruit trees.

Islam (1994) showed that age of the women was not significantly related to their extent of participation in agricultural income generally activities.

Miah, *et al.* (1994) found insignificant relationship between age of the rural women and their time spent in farming activities.

Fatema (1995) found that age of the farm women had no significant relationship with their training need in homestead agricultural production.

Begum (1998) in her study showed that age of the rural women had no significant relationship with their poverty alleviation owing to participation in ASA activities.

Chowdhuri (2000) in his study observed that age of the rural women had insignificant relationship with their opinion for participation in development activities.

Akhter (2000) in his study found that the age had positive significant relationship with their participation in agriculture, fisheries and poultry programs of BAUEC.

Aurangozeb (2002) found that age of the rural women had significant negative relationship with their adoption of integrated homestead farming technologies.

Islam (2002) in his study found that age of the women had no significant relationship with their involvement in income generating activities.

Salahuddin (2003) in his study found that the age of rural women had significant negative relationship with their involvement in homestead vegetable production.

2.2.2 Education and involvement

Devi (1995) found that education of women had a significant positive impact on labor force participation.

Nahar (1996) mentioned that there was significant positive relationship between knowledge of farm women in homestead farming and their education. As the level of education increased the level of knowledge on homestead farming was also increased. She also conducted that family education also had significant positive influence on the knowledge of farm women about homestead agriculture.

Rahman (1996) observed that level of education of the women had positive relationship with their participation in rural development activities.

Basak (1997) showed that education of the rural women under BRAC had a significant positive relationship with their impact of participation in BRAC rural development activities.

Chowdhuri (2000) in his study found that education of the rural women had significant positive relationship with their opinion for participation.

Akhter (2000) in his study observed that education of the women had significant positive correlation with their participation in decision making role in the family with regard to development activities.

Alam (2001) in his study found that education had non-significant relationship with their participation in agriculture, fisheries and poultry programmes of BAUEC.

Ahsan (2002) found that education of rural women had no significant relationship with their involvement in homestead vegetable production.

Aurangozeb (2002) observed that education of the rural women had significant positive relationship with their adoption of integrated homestead farming technologies.

Islam (2002) in his study found that education of the women had significant positive relationship with their involvement in income generating activities and decision making in household and health care.

Salahuddin (2003) in his study found that the education of rural women had significant positive relationship with their involvement in homestead vegetable production.

2.2.3 Family size and involvement

Parveen (1993) found that there was a significant positive relationship between family size of the farm women and their awareness and knowledge on environmental degradation.

Akanda (1994) mentioned that family size of the rural women had significant positive relationship with their participation in the cultivation of fruit trees. The relationship with homestead vegetable cultivation and non-farm house hold activities was also positive but not significant.

Rao (1994) reported that rural women's participation in agriculture was positive correlated with the size of their family.

Akanda (1994) showed that family size of the rural women had significant positive relationship with their participation in the utilization of homestead vegetable and fruit trees.

Chowdhuri (2000) in his study found that family size of the rural women had no significant relationship with their opinion for participation in development activities.

Nahar (2000) reported that there was no relationship between family size and participation of women in homestead vegetable cultivation, poultry, farming and

Parveen (1995) in her study observed that the level of existing knowledge of farm women on the use of modern technologies revealed that 58% of moderate knowledge, 35% had high while 7% of farm women possessed poor knowledge.

Ali (1995) stated that agricultural knowledge of the rural women had significant positive relationship with their attitude towards working in group in different agricultural activities.

Akhter (2000) in his study found that agricultural knowledge of the women had significant positive relationship with their participation in decision working role in the family with regard to development activities.

Salahuddin (2003) in his study found that knowledge of the rural women had no significant relationship with their involvement in homestead vegetable production.

2.2.5 Annual family income and involvement

Anwar (1994) found that family income was not associated with the participation of rural youth in agricultural activities. Thakare (1961) and Middleton (1958) also found the same findings from their study. Akhter (1989) opined that on an average the income from homestead varied from 5 to 13.14 thousand Taka in a year.

Akanda (1994) observed in his study that family income had significant positive relationship with their participation in the cultivation of fruit trees and non-farm household activities but not with homestead vegetable cultivation.

Nahar (2000) in her study found that family income had negative relationship with their participation in homestead vegetable cultivation, post harvest practices, poultry rearing and goat rearing.

Aurangozeb (2002) found that family income of the rural women had significant relationship with their adoption of integrated homestead farming technologies.

Ahsan (2002) found that annual income of rural women had no significant relationship with their involvement in homestead vegetable production.

Islam (2002) in his study found that family income of the women had significant positive relationship with their involvement in income generating activities and decision making household and health care.

Salahuddin (2003) in his study found that the family income of rural women had significant positive relationship with their involvement in homestead vegetable production.

2.2.6 Farm size and involvement

Halim (1991) in his evaluation report on farming system Research activities of homestead component mentioned that women of small farm family spent more time in agricultural activities as compared to medium and large farm family in Kazirshimla site (upland), whereas in Naogaon site (low lying area), women of medium farm family spent more time in agricultural activities.

Akanda (1994) in his study mentioned that farm size was one of the activities of rural family and it influenced all over variable. The rural women with bigger farm size had more participation in homestead vegetables cultivation, fruit tree cultivation and non-farm household activities. The reasons were that these families had more opportunities, more education, more agricultural knowledge and better extension contact.

Nahar (1996) in her study found that farm size had no significant relationship with usefulness of agricultural radio programme.

Basak (1997) observed that homestead size of the rural women under BRAC had a significant relationship with their impact of participation in BRAC rural development activities.

Begum (1997) observed that homestead area of the rural women had no significant relationship with their positive alleviation due to their participation in ASA development activities.

Aslam (2002) found that farm size of the rural women had significant positive relationship with their involvement in homestead vegetable production.

Akhter (2000) in his study found that farm size of the women had significant positive relationship with their participation in decision making role in the family with regard to development activities.

Islam (2002) in his study found that farm size of the women had non-significant relationship with their involvement in income generating activities.

Salahuddin (2003) in his study observed that the farm size of rural women had significant positive relationship with their involvement in homestead vegetable production.

2.2.7 Communication exposure and involvement

Karim (1993) concluded from a study there was a significant difference in the agricultural knowledge of farmers in sugarcane cultivation, based on their level of extension. Higher the level of extension contact of the farmers, higher was the level of agricultural knowledge in sugarcane cultivation.

Nahar (1996) in her study found that there was a significant positive relationship in the agricultural knowledge of farm women in homestead farming and their level of contact with information sources.

Chowdhury (2000) in his study observed that communication exposure of the rural women had no significant relationship with their opinion for participation in development activities.

Ahsan (2002) observed that organizational participation of rural women had significant positive relationship with their participation in homestead vegetable production.

Aurangozeb (2002) found that extension media of the rural women had significant positive relationship with their adoption of integrated homestead farming activities.

Salaudin (2003) in his study found that communication exposure of rural women had significant positive relationship with their involvement in homestead production.

CONCEPTUAL FRAMEWORK

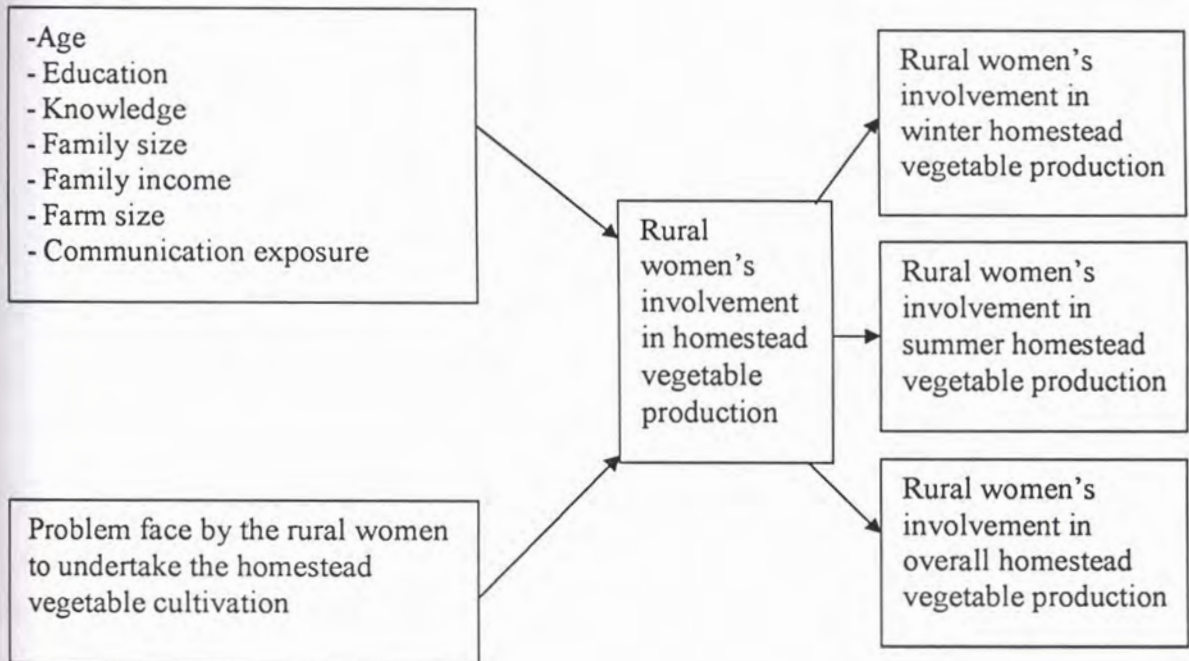


Fig. 2.1 A schematic diagram showing relationship among the concerned variables

CHAPTER III

METHODOLOGY

Importance of methods and procedures in conducting any research can hardly be over emphasized. Methodology plays an important role in a scientific research. A researcher should be careful in formulating methods and procedures in conducting research. Methodology should be such as it would enable the researcher to collect valid data and reliable information and analyze that information to arrive at correct decisions. Keeping this in mind the researcher took utmost care for using proper methods in all aspects of this investigation. Methods and research procedures followed in this study have been presented in this chapter.

3.1 Locale of this study

The study was conducted at two villages of Gopalpur union of Badarganj upazila under Rangpur district. There were 25 villages in Gopalpur union. Out of 25 villages two villages were selected purposively. The selected villages were Gopalpur and Akandapara. These villages were selected as locale of the study because of various NGOs were working on homestead development activities. The location of the study area is depicted in Fig. 3.1 and Fig. 3.2 .

3.2 Population and sample size of the study

The numbers of villages of Gopalpur union were 25 and total number of family head male and female were 6247. Among them 3236 were male and 3011 were female. It was very difficult to conduct on all the females of 25 villages within a short period of time. So out of 25 villages two villages were selected purposively and the rural women of these two selected villages constituted the population of the study. The number of farm family of these two selected (Gopalpur and Akandapara) villages were 321 and 190 respectively. Thus, a total of 511 rural women constituted the population of the study. It was considered that each contained at least a one housewife. Out of this 511 rural women around 19 % were selected randomly as the sample of the study. The sampling procedure was as follows:


Legend:  = Badarganj Upazila



Figure 3.1 A map of Rangpur district showing Badarganj upazila

Legend ■ = Gopalpur union



Figure 3.2 A map of Badarganj upazila showing Gopalpur union

- i. The researcher first prepared the list of rural women of these two villages with the help of union council, local leaders and aged persons of respective villages.
- ii. A number of 100 sample housewives were selected randomly from the two selected villages as shown on the Table 3.1.
- iii. A reserve list of 10 housewives (10% of the sample) was prepared for use in case of unavailability of the respondents of the sample for any reason.

Table 3.1 Distribution of population sample and reserve list of the rural women in two selected villages of Badarganj upazila under Rangpur district

Upazila	Villages	No. of rural women (population)	No. of rural women included as sample	No. of rural women included as reserve list
Badarganj	Gopalpur	321	63	6
	Akandapara	190	37	4
Total		511	100	10

3.3 Variable of the study

3.3.1 Independent variables

The independent variables were 7 selected characteristics of the rural women as follows:

- i. Age
- ii. Education
- iii. Family size
- iv. Knowledge of homestead vegetable cultivation
- v. Annual family income
- vi. Farm size
- vii. Communication exposure

3.3.2 Dependent variable

The dependent variable of the study was:

- i. Involvement of rural women in homestead overall vegetable cultivation

3.4 Measurement of variables

In order to conduct this study in accordance with the objectives it was necessary to measure the independent and dependent variables. The procedures for measuring the variables is described below:

3.4.1 Measurement of independent variables

Age: Age of a rural women referred to the period of time from her birth to the day of interview. Age was measured in terms of complete years. A score of one was assigned for each year of age.

Education: Education was measured by the years of schooling. If a respondent did not know how to read and write, her education score was given zero. Besides, the respondents got score for her number of years of schooling i.e., 1 for one year of schooling.

Family size: Family size was measured by the total number of family members of a respondents including herself, her husband, children, brothers and sisters, parents and dependent fully or partially on family's income. The total number of family members was considered as the family size score of the respondents.

Knowledge on homestead vegetable cultivation: It referred to the ability of a respondent to recall or recognized items of information related to homestead vegetables cultivation. It was measured by computing a homestead vegetables cultivation knowledge score. Each respondent was ask to answer ten questions and score was assigned as four for each question. A respondent could get a full score for correct answer to a question and zero for incorrect or no answer for each questions and the range should be 0-40. Partial score was assigned for partially correct answer to a question. Thus, a respondent could get knowledge on homestead vegetable cultivation.

Annual family income : It was the total income earned by respondent and other members of her family from various sources such as agriculture, business and others. Family income was measured in 'thousand' taka per year.

Farm size :

Farm size was estimated in terms of full benefit the respondent get from the land she operated farming operation. By considering benefit, the farm size of a respondent was measured by using the following formula:

$$\text{Farm size} = a+b+c+1/2(d +e)$$

Where,

a = Homestead area of a farmer (including ponds and garden)

b = Cultivated area owned by a farmer

c = Area leased in by a farmer

d = land taken from others on barga

e = Land given to others on barga

The farm size of a respondent was calculated in hectare.

Communication exposure : It refers to exposure to contact of rural women with 22 selected information sources and personalities. The communication exposure of a respondent was measured on the basis of her extent of contact with 22 selected information media. The scoring system was as follows:

SL No.	Types of communication media	Extent of contact	Score assigned
1	Upazila Agriculture Officer / year	Not even once 1 time 2 times ≥ 3 times	0 1 2 3
2	Agriculture Extension Officer / year	Not even once 1-2 times 3-4 times ≥ 5 times	0 1 2 3
3	Sub-Assistant Agriculture Officer / Year	Not even once 1-3 times 4-5 times ≥ 6 times	0 1 2 3
4	Local leader / Month	Not even once 1-2 times 3-4 times ≥ 5 times	0 1 2 3
5	NGO worker / Month	Not even once 1-2 times 3-4 times ≥ 5 times	0 1 2 3
6	Input dealer / 3 months	Not even once 1-2 times 3-4 times ≥ 5 times	0 1 2 3
7	Experience farmer / month	Not even once 1-2 times 3-4 times ≥ 5 times	0 1 2 3
8	Neighbor / week	Not even once 1-2 times 3-4 times ≥ 5 times	0 1 2 3
9	Relatives / week	Not even once 1-2 times 3-4 times ≥ 5 times	0 1 2 3
10	Group discussion / 6 months	Not even once 1-2 times 3-4 times ≥ 5 times	0 1 2 3
11	Field day / year	Not even once 1 time 2 times ≥3 times	0 1 2 3

SL No.	Types of communication media	Extent of contact	Score assigned
12	Result demonstration / year	Not even once 1 time 2 times ≥3 times	0 1 2 3
13	Method demonstration / year	Not even once 1-2 times 3-4 times ≥ 5 times	0 1 2 3
14	Agricultural training / life	Not even once 1 time 2-3 times ≥ 4 times	0 1 2 3
15	Daily newspaper / week	Not even once 1-2 times 3-4 times ≥ 5 times	0 1 2 3
16	Radio / week	Not even once 1-2 times 3-4 times ≥ 5 times	0 1 2 3
17	Television / week	Not even once 1-2 times 3-4 times ≥ 5 times	0 1 2 3
18	Poster / year	Not even once 1-2 times 3-4 times ≥ 5 times	0 1 2 3
19	Leaflet / year	Not even once 1-2 times 3-4 times ≥ 5 times	0 1 2 3
20	Magazine / year	Not even once 1-2 times 3-4 times ≥ 5 times	0 1 2 3
21	Agricultural fair / year	Not even once 1 time 2 times ≥3 times	0 1 2 3
22	Agril. film / 3 years	Not even once 1 time 2 times ≥3 times	0 1 2 3

The communication exposure of a respondent calculated by adding all the weights against the responses of 22 communication media together. Thus, the communication exposure score of a respondent could range from 0-66, where 0 indicating no communication exposure and 66 indicating highest communication exposure.

3.4.2 Measurement of dependent variables

Involvement of rural women in homestead vegetable cultivation was the dependent variable of the study. It was measured by the addition of a) Involvement of rural women in homestead winter vegetable cultivation and b) Involvement of rural women in homestead summer vegetable cultivation

a) Involvement of rural women in homestead winter vegetable cultivation: Involvement of rural women in homestead winter vegetable cultivation of a respondent was measured by computing the nature of involvement in 10 selected operations and production involvement in 8 selected winter vegetables during last year. Scoring was made by following the formula developed by (Alam, 2001) for involvement in winter vegetables cultivation.

$$\text{Involvement in winter vegetable cultivation score} = \sum OI \times \sum PI$$

Where,

OI = Operation involvement score

PI = Production involvement score

Operation involvement score was computed in the following way:

<u>Nature of involvement</u>	<u>Score assigned</u>
No involvement	0
Occasional Involvement	1
Regular Involvement	2

As ten operations was considered in this study, the nature of involvement score of a respondent could ranged from 0 to 20, while 0 indicates no involvement and 20 indicates the highest involvement in homestead cultivation in nature.

Production involvement score was assigned in the following way:

<u>Duration of production (Continuous)</u>	<u>Score assigned</u>
1 year	1
2 years	2
3-5 years	3
Above 5 years	4

As 8 winter vegetables were selected for the study, production involvement score of a respondent could range from 0 to 32, while 0 indicating no production involvement and 32 indicating the highest production involvement score. Thus involvement of winter vegetable cultivation score of respondent could range from 0 to 640, while 0 indicating no involvement and 640 indicating the highest involvement in winter vegetable cultivation.

b) Involvement of rural women in homestead summer vegetable cultivation:

Involvement of rural women in homestead summer vegetable cultivation of a respondent was measured by computing the nature of involvement in 10 selected operations and production involvement in 8 selected summer vegetables during last year. Scoring was made by following the formula developed by (Alam, 2001) for involvement in summer vegetables cultivation.

c) Involvement of rural women in overall homestead vegetable cultivation:

Finally involvement of rural women in homestead vegetable cultivation was measured by adding the involvement of homestead winter and summer vegetables cultivation scores.

Thus involvement of homestead vegetable cultivation score of a respondent could range from 0 to 1280 while 0 indicating no involvement and 1280 indicating the highest involvement in homestead cultivation.

3.5 Measurement of problem faced by the rural women in homestead vegetable cultivation

Twelve problems of homestead vegetable cultivation activities in different aspect were considered for this study. This was measured by using a 6 point scale. Score were assigned to 5 for very high problem, 4 for high problem, 3 for medium problem, 2 for low problem, 1 for very low problem and 0 for no problem at all. To ascertain the intensity of problem in homestead vegetable cultivation, Problem Facing Index (PFI) was computed by using the following formula for each problem.

$$PFI = P_{VH} \times 5 + P_H \times 4 + P_M \times 3 + P_L \times 2 + P_{VL} \times 1 + P_n \times 0$$

Where

PFI = Problem Facing Index

P_{VH} = % of vegetable cultivators having very high problem

P_H = % of vegetable cultivators having high problem

P_M = % of vegetable cultivators having medium problem

P_L = % of vegetable cultivators having low problem

P_{VL} = % of vegetable cultivators having very low problem

P_n = % of vegetable cultivators having no problem at all

As there were 100 respondents, so Problem Facing Index (PFI) could range 0–500.

Where 0 indicated no problem and 500 indicated very high problem.

3.6 Data gathering instrument

An interview schedule was developed in Bengali in order to collect the necessary data from the rural women to determine their extend of involvement in selected homestead vegetable cultivation activities, to describe there selected characteristics and other information to fulfill the objectives of the study. Simple direct question and also a number of scales were included in the data collecting instrument for gathering data as per objectives.

It should be mention here that a pretest of the draft interview schedule was carried out on 10 women of the selected villages to see it appropriateness for collection of data.

Necessary correction and modification were made on the basis of the responses of the pretend. Then final interview schedule was prepared and multiplied for collecting data.

3.7 Collection of data

Data were collected personally by the researcher himself from the sample by using the interview schedule. Data collection was started on 25 January 2006 and completed on 25 February 2006. While starting the interview with any respondent, the researcher took all possible care to establish rapport with him, so that the respondent did not feel any hesitation to furnish proper answer. The researcher received full co-operation from the respondent during the time of interview. The entire process of data collection took 30 days.

3.8 Analysis of data

After data collection, these were compiled, tabulated and analyzed statistically in accordance with the objectives of study. Qualitative data were converted into quantitative data by measure of suitable scoring where ever necessary. Descriptive statistics such as number and percentage distribution, rank order, range, mean and standard deviation were used in describing the variables of the study. For exploring the relationship between the involvement of rural women in homestead vegetable cultivation and their selected characteristics, persons product moment correlation analysis was used. Five percent (0.05) level of significant was used as the basis of rejecting any null hypothesis.

CHAPTER IV

RESULT AND DISCUSSION

Purpose of this chapter, is to describe the findings of the present study. In accordance with the objectives of the study, the findings are presented in four sections. In the first section, the selected characteristics of the rural women have been discussed. The second section, their extent of involvement in homestead vegetable cultivation have been discussed. In the third section have been discussed relationships between the selected characteristics of the rural women and their extension of involvement in homestead vegetable cultivation has been discussed. Finally, in the fourth section, the problem faced by the rural women in involving the homestead vegetable cultivation have been shown with rank in descending order.

4.1 Selected characteristics of the rural women

This section deals with the classification of the rural women according to their various characteristics. Women may play an important role in the homestead vegetable production. Behaviour of an individual women is determined to a large extent by her characteristics. It was, therefore, assumed that involvement in homestead vegetable cultivation would be influenced by their various characteristics. Seven individual characteristics of the rural women selected which formed the independent variables. These characteristics of the rural women have described in this section. A summary profile of the characteristics of rural women is given in table 4.1.

Table 4.1 Salient features of the selected characteristics of the rural women

SL No.	Name of characteristics	Measuring units	Ranges of scores	
			Possible	Observed
1	Age	Years	Unknown	17-48
2	Education	Years of schooling	Unknown	0-14
3	Family size	No. of members	Unknown	4-12
4	Knowledge about homestead vegetable cultivation	Computed score	0-40	20-36
5	Annual family income	Thousand taka	Unknown	40-280
6	Farm size	Area in hectare	Unknown	0.2-2.38
7	Communication exposure	Computed score	0-66	6-33

4.1.1 Age of the rural women

Age of the rural women ranged from 17 to 48 years with the average 32.18 and standard deviation of 8.10. On the basis of their age, the rural women were classified into three categories as young, middle-aged and old. This distribution is shown in table 4.2.

Analysis of the data contained table 4.2 reveals that half (50 %) of respondent women were middle aged while old were the lowest (3%) proportion and young constituted 47 percent. It is expected that middle aged and young women (97%) were more interested, energetic and enthusiastic in involvement of homestead vegetable cultivation. Particularly middle aged housewives were well experienced and more interested with their involvement. Thus, decision making regarding the involvement in homestead vegetable production in the study and might be influenced by the middle aged and young rural women.

Table 4.2 Distribution of respondent rural women according to their age

Age categories (years)	Rural women		Mean	Standard deviation
	Number	Percent		
Young (up to 30)	47	47	32.18	8.10
middle aged (31- 45)	50	50		
Old aged (>45)	3	3		
Total	100	100		

v

4.1.2 Education of rural women

The levels of education of the respondent rural women ranged from 0 to 14 years of schooling having an average of 4.91 and standard deviation of 4.03. On the basis of their education scores the rural women were classified into four categories as illiterate, primary, secondary and above secondary. Their distribution is shown in table 4.3.

Data furnished in table 4.3 indicated that the highest proportion (46%) of the rural women had primary education whereas second highest (23%) proportion had secondary education, 12 percent above secondary education and 19 percent illiterate. During collection of data it was observed that higher educated rural women were more progressive and innovative in homestead vegetable cultivation. Education status of the study area is 81%. It is more than the national average. Because there are many school and college present in the area.

Table 4.3 Classification of respondent according of their education

Education categories (years of schooling)	Rural women		Mean	Standard deviation
	Number	Percent		
No education (0)	19	19	4.91	4.03
Primary education (1-5)	46	46		
Secondary education (6-10)	23	23		
Above secondary (>10)	12	12		
Total	100	100		

4.1.3 Family size of the rural women

The number of family members of the respondent rural women ranged from 4 to 12 members with an average of 8.36 and standard deviation of 2.04. Based on the family size, the respondent women were classified into three categories as small, medium and large family shown in the table 4.4.

Data in table 4.4 indicated that the highest proportion (50%) of rural women had medium families consisting of 7 to 9 members, while 32 percent large family and 18 percent small family. Women with medium family size spent more time in homestead vegetable cultivation compared to large and small family. Housewife of the large family with small land holdings spare more time in vegetable cultivation to provide food and cash for the survival of the family.

Table 4.4 Classification of respondent according of their family size

Categories (No. of members)	Rural women		Mean	Standard deviation
	Number	Percent		
Small (up to 6)	18	18	8.36	2.04
Medium (7-9)	50	50		
High (>9)	32	32		
Total	100	100		

4.1.4 Knowledge of the rural women about homestead vegetable cultivation

Knowledge of the rural women on homestead vegetable cultivation ranged from 20 to 36 against the possible range of 0 to 40. The average score and standard deviation were 27.33 and 4.28 respectively. Based on these scores, the respondent women were classified into three categories as low, medium and high knowledge (Table 4.5). Data in table 4.5 reveal that the highest proportion (42%) of the respondent rural women had medium knowledge on homestead vegetable cultivation, 33 percent belonged to low knowledge and 25 percent of them belonged to high knowledge on homestead vegetable cultivation.

It was assumed that more knowledgeable women were more progressive and innovative than those of low knowledge with respect to both farming and non farming activities and manage homestead activities more efficiently.

Table 4.5 Classification of respondent according of their knowledge on homestead vegetable cultivation

Categories (scores)	Rural women		Mean	Standard deviation
	Number	Percent		
Low (up to 24)	33	33	27.33	4.28
Medium (25-30)	42	42		
High (>30)	25	25		
Total	100	100		

4.1.5 Family annual income of the rural women

The observed family annual income of the respondent rural women ranged from Tk 40 thousand to Tk 280 thousand, the average being Tk 101.48 thousand and standard deviation of 57.32. The rural women were classified into three categories on the basis of annual family income (table 4.6).

Data furnished in table 4.6 revealed that the highest proportion (58%) of the respondent rural women had medium annual family income while 25 percent had low income and only 17 percent of the respondents had high income group. Considering the above findings there was an urgent need to take all possible attempts by extension agencies to increase more income.

Table 4.6 Classification of respondent according of their family income

Categories (thousand taka)	Rural women		Mean	Standard deviation
	Number	Percent		
Low (up to 60)	25	25	101.48	57.32
Medium (61-150)	58	58		
High (>150)	17	17		
Total	100	100		

4.1.6 Farm size of the rural women

Farm size of the rural women of the study area ranged from 0.2 to 2.38 hectares with an average of 0.63 hectares and standard deviation of 0.45. Depending on the farm size of the respondents were classified into three categories as small, medium and large farm (4.7).

Data furnished in table 4.7 indicated that the highest proportion (57%) of the respondent rural women belonged to the small farm category compared to 39 percent having medium farm size and only 4 percent high farm size. Thus, most (96%) of the respondent women were in small to medium farm category. It indicated that majority

of the families possessing small amount of land. Farmers are becoming landless for various reasons of which fragmentation of land due to inheritance is the most important one. Housewife of the small and medium farms are more active and involved in different productive activities to support family expenses and the nutrition. The wife of large holding farmers are disinterested to cultivate vegetable because the large holding farmers are rich enough and they do not need supplementary income from homestead vegetable cultivation, their wives take it a humiliating practice to cultivate vegetables in their homestead considering their social status. So, an appropriate program is needed depending on the farm size to increase skill of rural women in different productive activities and to improve life style.

Table 4.7 Classification of respondent according of their farm size

Categories (ha.)	Rural women		Mean	Standard deviation
	Number	Percent		
Small farm (up to 0.5)	57	57	0.63	0.45
Medium farm (0.51-1.50)	39	39		
Large farm (>1.50)	4	4		
Total	100	100		

4.1.7 Communication exposure of the rural women

The communication exposure scores of the rural ranged from 6 to 33 against the possible range of 0 to 66 with an average of 17.14 and Standard deviation of 7.87. According to communication exposure scores, respondents were classified into three categories as low, medium and high communication (Table 4.8).

Data presented in table 4.8 show that the highest proportion (54%) of the rural women of the study area had the medium communication exposure as composed to 28 percent of low and 18 percent high communication exposure.

Table 4.8 Classification of respondent according of their communication exposure

Categories (Scores)	Rural women		Mean	Standard deviation
	Number	Percent		
Low (up to 10)	28	28	17.14	7.87
Medium (11-25)	54	54		
High (>25)	16	16		
Total	100	100		

4.2 Involvement of rural women in homestead vegetable cultivation

Involvement in homestead vegetable cultivation was determined in two dimensions, viz; homestead winter vegetable cultivation and homestead summer vegetable cultivation. Summary profile of these two dimensions with overall homestead vegetable cultivation presented in table 4.9

Table 4.9 Summary profile of homestead vegetable cultivation

Dependent variables	Measuring units	Possible range	Observed range	Mean	Standard deviation
1) Involvement in homestead winter vegetables cultivation	Computed scores	0-640	170-504	278.9	84.48
2) Involvement in homestead summer vegetables cultivation	Computed scores	0-640	154-480	293.68	76.03
3) Involvement in homestead overall vegetables cultivation	Computed scores	0-1280	350-900	572	141.19

4.2.1 Involvement in winter homestead vegetable cultivation

The Involvement scores of the rural women in homestead winter vegetable cultivation ranged from 170 to 504 against possible range of 0-640 with an average of 278.9 and standard deviation of 84.48. On the basis of involvement scores, the rural women were classified into three categories as low, medium and high involvement and shown in Table 4.10.

Data presented in Table 4.10 shows that the highest percentage (66%) of the rural women had medium involvement in winter vegetable cultivation compared to 29 percent of low involvement and only 5 percent high involvement. Education increases the horizon of knowledge of an individual. Most of the respondents maintained low to medium communication with the extension agents. They had low to medium income and farm size. Besides, winter vegetables can be cultivated easily than other season. So, most of the respondents were participated moderately with this activity.

Table 4.10 Classification of respondent according of their extent of involvement in homestead winter vegetables cultivation

Categories (Scores)	Rural women		Mean	Standard deviation
	Number	Percent		
Low involvement (up to 220)	29	29	278.9	84.48
Medium involvement (221-420)	66	66		
High involvement (>420)	5	5		
Total	100	100		

4.2.2 Involvement in homestead vegetable cultivation

The involvement scores of the rural women in homestead vegetable production ranged from 350 to 900 against possible score of 0 to 1280 with an average of 527.58 and standard deviation of 141.19. On the basis of involvement scores, the rural women were classified into three categories as shown in Table 4.12.

Data presented in Table 4.12 shows that the highest (67%) proportion of the rural women have medium involvement in homestead vegetable cultivation compared to 24 percent of low and only 9 percent high involvement. Education and extension contact might be change attitude of clients radically and he/she becomes interested to involve with productive activities which has some what been reflected here.

Table 4.11 Classification of respondent according of their extent of involvement in homestead vegetables cultivation

Categories (Scores)	Rural women		Mean	Standard deviation
	Number	Percent		
Low involvement (up to 450)	24	24	572.58	141.19
Medium involvement (451-850)	67	67		
High involvement (>850)	9	9		
Total	100	100		

4.2.3 Involvement in homestead vegetable cultivation

The involvement scores of the rural women in homestead vegetable production ranged from 350 to 900 against possible score of 0 to 1280 with an average of 527.58 and standard deviation of 141.19. On the basis of involvement scores, the rural women were classified into three categories as shown in Table 4.12.

Data presented in Table 4.12 shows that the highest (67%) proportion of the rural women have medium involvement in homestead vegetable cultivation compared to 24 percent of low and only 9 percent high involvement. Education and extension contact

might be change attitude of clients radically and he/she becomes interested to involve with productive activities which has some what been reflected here.

Table 4.12 Classification of respondent according of their extent of involvement in homestead vegetables cultivation

Categories (Scores)	Rural women		Mean	Standard deviation
	Number	Percent		
Low involvement (up to 450)	24	24	572.58	141.19
Medium involvement (451-850)	67	67		
High involvement (>850)	9	9		
Total	100	100		

4.2.4 Comparative involvement of rural women in homestead vegetable cultivation

4.2.4.1 Crop wise comparative involvement of rural women in homestead summer vegetable cultivation

involvement index of 16 selected vegetable have been presented in Table 4.13 along with rank order. Observed involvement index ranged from 156 to 372 with an average of 240.18. Involvement index indicate that out of 16 vegetables 'Sweet gourd' placed in the first position (372). The reason may be that it can be cultivated easily, it gets a large support from house roof. So, no need of extra support, no need of intercultural operation, yield is very high, can be preserve for long time and high market price all over the year. Bottle gourd was the second position (242). As reason it can be mentioned that i) although the cultivation practice are same as to sweet gourd, yield and market price are less than Sweet gourd. Wax gourd placed at the third position (311). Although the cultivation practice are same as to sweet gourd and bottle gourd, yield and market price less than that of sweet gourd and bottle gourd. Teasle gourd could be placed in the last position with involvement index of 156. The reason

was that bulbs were not available, intercultural operations and support were more expensive and production cost was higher than other vegetables. The women were medium participated in remaining vegetable. Because now-a-days GOs and NGOs had taken several programs on homestead vegetable production and they were giving emphasis to participate women in this program. Moreover, TV, Radio and other mass media advertising the importance of vegetable that might have brought some changes in their attitude in vegetable cultivation.

Table 4.13 Crop wise comparative involvement of rural women in 16 selected homestead vegetables cultivation

Sl. No.	Name of vegetables	Involvement of women					
		1 year	2 years	3-5 years	>5 years	Involvement index	Rank order
1	Sweet gourd	0	6	16	78	372	1
2	Bottle gourd	8	8	18	66	342	2
3	Wax gourd	12	16	21	51	311	3
4	Egg plant	10	23	25	42	299	4
5	Radish	14	24	26	36	284	5
6	Bitter gourd	15	23	31	31	278	6
7	Potato	19	25	33	23	260	7
8	Tomato	21	34	29	16	240	8
9	Snake gourd	30	36	25	9	213	9
10	Cabbage	29	41	23	7	208	10
11	Ridge gourd	35	39	21	5	196	11
12	okra	41	38	16	5	185	12
13	Pointed gourd	46	36	15	3	175	13
14	Cauliflower	52	34	12	2	164	14
15	Bengal spinach	53	35	11	1	160	15
16	Teasel gourd	56	34	10	0	156	16

4.2.4.2 Operation wise comparative involvement of rural women in operations related to homestead summer vegetable cultivation

Involvement index of 20 selected operations have been presented in Table 4.14 along with rank order. The computed involvement index of 20 operations ranged from 71 to 162 against possible range of 0 to 200 with an average of 118. Involvement index revealed that out of 20 operations bed preparation (winter) placed the first position (162). Because most of the farmers grow vegetables in winter season. For this they had to bed preparation. Seed collection (summer) stood the second position (161). Because most of the farmers collect seed from summer vegetables due to having some advantages such as available fertile seed, easy to collect, easy to preserve. Ranking position of transplanting seedling (winter) was third position (157). Because some of the winter vegetables (e.g. tuberous crops) did not require to transplant and in some case farmers do not transplant due to lack of available land, labour, time etc. and insect control (summer) was the lowest position (71). The reason might be that farmers didn't have enough knowledge to control insect for vegetable cultivation through their level of involvement varies with nature of operations.

Table 4.14 Operation wise comparative involvement of rural women in 20 selected operation of homestead vegetables cultivation

Sl. No.	Operation in vegetables cultivation	Involvement of rural women				
		Never	Occasional	Regular	Involvement Index	Rank order
1	Bed preparation (w)	12	14	74	162	1
2	Seed collection (s)	12	15	73	161	2
3	Transplanting of seedling (w)	13	17	70	157	3
4	Seed preservation (s)	17	15	68	151	4
5	Pit preparation (s)	19	15	66	147	5
6	Seed sowing (s)	21	17	62	141	6
7	weeding (w)	21	18	61	140	7
8	Irrigation (s)	28	17	55	127	8
9	Irrigation (w)	28	20	52	124	9
10	Weeding (s)	27	23	50	123	10
11	Support arrangement for creeper vegetables (s)	33	19	48	115	11
12	Fertilizer application (w)	30	30	40	110	12
13	Drainage (s)	35	28	37	102	13
14	Insect control (w)	34	30	36	102	14
15	Seed sowing (w)	37	31	32	95	15
16	Seed collection (w)	42	28	30	88	16
17	Fertilizer application (s)	39	34	27	88	17
18	Seed preservation (w)	43	32	25	82	18
19	Drainage (w)	48	30	22	74	19
20	Insect control (s)	50	29	21	71	20

4.3 Relationship between the selected characteristics of the rural women and their involvement in homestead vegetable cultivation

This chapter attempts to explain the relationships of the selected characteristics of the respondents and their involvement in homestead vegetable cultivation. The selected independent variables were age, education, family size, knowledge about of homestead vegetable cultivation, family annual income, farm size and communication exposure. The dependent variables were homestead winter vegetable cultivation, homestead summer vegetable cultivation and overall homestead vegetable cultivation. The summary of correlation analysis have been presented in table 4.15 and the correlation matrix in the Appendix II.

Table 4.15 Coefficient of correlation showing relationship between the independent and dependent variables

Independent variables (Selected characteristics of the rural women)	Computed 'r' values with
	Overall homestead vegetables cultivation (y ₃)
1. Age	0.317**
2. Education	0.643**
3. Family size	-0.014 ^{NS}
4. Farm size	0.249*
5. Family income	0.690 **
6. Communication exposure	0.573**
7. Knowledge about homestead gardening	0.640**

NS = Non significant

* = Significant at 5% level of probability

** = Significant at 1% level of probability

4.3.1 Relationship between the selected characteristics of the rural women and their involvement in overall homestead vegetable cultivation

4.3.1.1 Relationship between age of the rural women and their involvement in overall homestead vegetable cultivation

In order to determine the relationship between age of the rural women and their involvement in overall homestead vegetable cultivation was examined by the following hypothesis: "There was no relationship between age of the rural women and their involvement in homestead summer vegetable cultivation". The relationship between the concerned two variables was positively significant as the computed value of " r " = 0.317 was higher than tabulated value with 98 degrees of freedom at 0.01 level of probability.

Hence, the concerned null hypothesis was rejected. The researcher therefore, concluded that age of the rural women had significant positive relationship with their involvement in overall homestead vegetable cultivation. The interpretation is that the person who were aged have much involvement with the activities. Because aged women are eager to increased their family income.

4.3.1.2 Relationship between education of the rural women and their involvement in overall homestead vegetable cultivation

In order to determine the relationship between education of the rural women and their involvement in overall homestead vegetable cultivation was examined by testing the following hypothesis: "There was no relationship between education of the rural women and their involvement in homestead vegetable cultivation". The computed value of " r " = 0.643 with 98 degrees of freedom at 0.01 level of probability. The observed value of correlating coefficient showed a positive and significant relationship between education and involvement in overall homestead vegetable cultivation.

Hence, the concerned null hypothesis was rejected. The researcher therefore, concluded that education of the rural women had significant positive relationship with their involvement in overall homestead vegetable cultivation. The interpretation is that education broadens the horizon of knowledge of an individual. A person having more

education is likely to be more conscious and dynamic with his/her outside world. At the same time she/he becomes curious and likes to participate with activities which may increase his/her income in the homestead.

4.3.1.3 Relationship between family size of the rural women and their involvement in overall homestead vegetable cultivation

The relationship between family size of the rural women and their involvement in overall homestead vegetable was determined by testing following null hypothesis: "There was no relationship between family size of the rural women and their participation in overall homestead vegetable production". The relationship between the concerned two variables was possibility insignificant as the computed value of "r" = -0.014 was lower than tabulated value with 98 degrees of freedom at 0.05 level of probability.

Hence, the concerned null hypothesis could not be rejected. The researcher, therefore, concluded that family size of the rural women had no significant relationship with their participation in overall homestead vegetable production. The interpretation is that the rural women who had small family involve more in homestead vegetable cultivation rather than large family. Big family could hamper to involve in any creative and economic program because the women of this family would very busy for managing her family members.

4.3.1.4 Relationship between knowledge of the rural women and their involvement in overall homestead vegetable cultivation

The relationship between knowledge of the rural women and their involvement in overall homestead vegetable cultivation was determined by testing the following hypothesis: "There was no relationship between knowledge of the rural women and their involvement in overall homestead vegetable cultivation". The relationship between the concerned two variables was positively significant as the computed value of "r" = 0.640 was higher than tabulated value with 98 degrees of freedom at 0.05 level of probability.

Hence, the concerned null hypothesis was rejected. The researcher, therefore, concluded that knowledge of the rural women had significant positive relationship with their involvement in overall homestead vegetable cultivation. It indicates that the more the knowledge of the rural women, the more will be their involvement in homestead cultivation. Because due to their knowledge they realize the benefit and important of homestead vegetable cultivation which influence them in participation.

4.3.1.5 Relationship between annual family income of the rural women and their involvement in overall homestead vegetable cultivation

The relationship between family income of the rural women and their involvement in overall homestead vegetable cultivation was examined by the testing the following null hypothesis: "There was no relationship between annual family income of the rural women and their involvement in overall homestead vegetable cultivation". The relationship between the concerned two variables was positively significant as the computed value of " r " = 0.690 was higher than tabulated value with 98 degrees of freedom at 0.01 level of probability.

Hence, the concerned null hypothesis was rejected. The researcher, therefore, concluded that annual family income of the rural women had significant positive relationship with their involvement in overall homestead vegetable cultivation. This indicates that respondents who had higher income participation more in homestead vegetable cultivation. On the other hand, who had low income did not have much involvement with the activities because they had low risk taking ability.

4.3.1.6 Relationship between farm size of the rural women and their involvement in overall homestead vegetable cultivation

The relationship between farm size of the rural women and their involvement in overall homestead vegetable cultivation was examined by the testing the following null hypothesis: "There was no relationship between farm size of the rural women and their involvement in homestead vegetable production". The relationship between the

0.209 was higher than tabulated value with 98 degrees of freedom at 0.01 level of probability.

Hence, the concerned null hypothesis was rejected. The researcher, therefore, concluded that farm size had significant positive relationship with overall homestead vegetable production. This indicates that the rural women with large farm size had more involvement in overall homestead vegetable cultivation. The women who have large farm size are able to grow cereal crops. So easily can involve in homestead vegetable cultivation.

4.3.1.7 Relationship between communication exposure of the rural women and their involvement in overall homestead vegetable cultivation

The relationship between communication exposure of the rural women and their involvement in overall homestead vegetable cultivation was examined by the testing the following null hypothesis: "There was no relationship between communication exposure of the rural women and their involvement in homestead vegetable cultivation". The relationship between the concerned two variables was positively significant as the computed value of " r " = 0.573 was higher than tabulated value with 98 degrees of freedom at 0.01 level of probability.

Hence, the concerned null hypothesis was rejected. The researcher, therefore, concluded that communication exposure of the rural women had significant positive relationship with their involvement in overall homestead vegetable cultivation. It indicates that with the use of communication sources of the respondents, there involvement in overall homestead vegetable cultivation also increase.

4.4 Problem faced by the rural women to undertake the homestead vegetable cultivation

It is observed that the farmer faced a number of problems or constrains in performing any production activity. In case of vegetable cultivation activities, the extent and types

of problems are diversified as they were mostly controlled by nature. However, 12 problems of homestead vegetable production activities in different aspects were selected. In order to understanding the comparative importance, the problems have been arranged in rank order according their PFI as shown in Table 4.16.

Data furnished in Table 4.16 indicated that "Lack of quality seeds and seedlings" was the top most important problem and secured 1st rank with PFI of 451. The top ranking problem caused due to lack of seed selection, processing and storage. The second problem was. Do not get market price" with PFI of 439 then Diseases and insect infestation ranked 3rd according to problem facing index. Lack of intensive care was the lowest problem according to problem facing index. From the table it is observed that all the participants have been faced problem in a varying degrees. Therefore to ensure the involvement the authority should take appropriate measurement to reduce the problems.

Table 4.16 Rank order of the problems faced by the rural women

Problems	Rural women (%)					PFI	Ranked order
	Very high	High	Medium	Low	Very low		
1. Lack of quality seed and seedlings	62	27	11	0	0	451	1
2. Do not get due market price	58	23	19	0	0	449	2
3. Disease and insect infestation	51	25	12	12	0	415	3
4. Lack of money for buying seeds, seedlings and other materials	46	22	15	9	8	389	4
5. lack of processing of produce vegetables	38	25	14	12	11	367	5
6. Lack of credit	31	22	23	11	13	347	6
7. Lack of knowledge for pesticide application in time	20	17	12	28	23	283	7
8. Lack of knowledge for fertilizer application in time	12	14	18	27	29	253	8
9. Cattle and goat destroy the vegetables	5	13	16	29	37	220	9
10. Soil quality in homestead area is not good	0	11	21	36	32	211	10
11. Lack of required information in time	0	12	17	33	38	203	11
12. Lack of intensive care	0	7	15	31	47	182	12

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of Introduction

This study was conducted in two villages, namely Gopalpur and Akandapara of Gopalpur union under Rangpur district where DAE and some local NGO's are working together. An understanding of the factors influencing the involvement of the rural women is necessary to plan and implement the homestead vegetable cultivation programme through DAE and local NGOs collaborative efforts.

5.2 Summary of Objective

In order to give proper direction to this study the following objectives were formulated:

1. To asses the extent of involvement of rural women in homestead vegetable cultivation.
2. The determine and describe some selected characteristics of farmers.
3. To explore relationship between the selected characteristics of rural women and their extent of involvement in homestead vegetable cultivation.
4. To asses the problem faced by the rural women in homestead vegetable cultivation.

4.3 Summary of Findings

Findings in respect of involvement of rural women in homestead vegetable cultivation and other related maters.

5.3.1 Selected characteristics of the rural women

Seven characteristics of the rural women were selected. Findings in respect of the selected characteristics are summarized below:

Age

Age of the rural women ranged from 17 to 48 years and the mean was 32.18. The highest proportion(50%) of rural women were middle aged, while 47 percent young and 3 percent old.

Education

Education of the rural women ranged from 0 to 14 years of schooling, while the average years of schooling were 4.91. The highest proportion (46%) rural women were primary education, while 23 percent of rural women had secondary education, 12 percent had adore secondary education and 19 percent had no education.

Family size

The number of family members of the respondent rural women ranged from 4 to 12 members with an average of 8.36. The highest proportion (50 %) of rural women had medium families as compared to 32 percent having large families and 18 percent having small families.

Knowledge

Knowledge of the rural women ranged from 20 to 36, while the average of knowledge was 27.33. The highest proportion (42 %) of rural women had medium Knowledge, while 33 percent had low knowledge and 25 percent had high knowledge.

Family income

The annual family income of the respondent women is ranged from Tk 40 thousand to Tk 280 thousand, the average being Tk 101.48 thousand. The highest proportion (58 percent) of the respondent had medium family income while 25 percent had large family income and 17 percent had low income.

Farm size

Farm size of the responded ranged from 0.2 ha to 0.38 ha with an average of 0.63 ha. The highest proportion of (57 percent) of the respondent women had small farm size, while 39 percent had medium farm size and 4 percent had large farm size.

Communication exposure

The communication exposure score of the respondent women ranged from 6 to 33 with an average 17.14. The highest proportion (54 percent) of the respondent women had medium communication exposure, while 28 percent had low communication exposure and 16 percent had high communication exposure.

5.3.2 Involvement of rural women in homestead vegetable cultivation

5.3.2.1 Involvement of rural women in homestead winter vegetable cultivation

It was calculated that the respondent belonging to low involvement categories was 29 percent, medium participation was 66 percent and high percent was 5 percent.

Out of 8 selected vegetables, “Bottle gourd”, “Egg plant” and “Radish” were 1st, 2nd and 3rd with participation index (PI) of 292, 280 and 262 respectively. “Bengal spinach” was the lowest with participation index of 168.

Out of 10 selected operations, “bed preparation”, “transplanting of seedling” and “weeding” were the 1st, 2nd and 3rd rank with involvement index of 162, 157 and 140 respectively. “Drainage” was the lowest with involvement index of 74.

5.3.2.2 Involvement of rural women in homestead summer vegetable cultivation

It was computed that the rural women belonging to the low involvement category was 28 percent, medium and high involvement category were 68 percent and 4 percent respectively.

Out of 8 selected summer vegetables, “Sweet gourd”, “Wax gourd” and “Bitter gourd” were the 1st, 2nd and 3rd rank with involvement index of 322, 288 and 257 respectively. “Teasle gourd” was the lowest with involvement index of 161.

Out of 8 selected operations, “seed collection”, “seed preservation” and “pit preparation” were the 1st, 2nd and 3rd rank with involvement index of 162, 151 and 147 respectively. “Insect control” was the lowest with involvement index of 71.

5.3.2.3 Involvement of rural women in overall homestead vegetable cultivation

It was calculated that the rural women belonging to the low involvement category was 24 percent, medium involvement was 67 percent and high involvement was 9 percent.

It was computed that out of 16 selected homestead vegetables, “sweet gourd”, “bottle gourd” and “wax gourd” were the 1st, 2nd and 3rd rank with involvement index of 322, 292 and 288 respectively. However, “teasle gourd” was the lowest with involvement index of 161.

Out of 20 selected operations “bed preparation” (w), “seed collection” (s), and “Transplanting of seedling” (w) were the 1st, 2nd and 3rd rank with involvement index of 162, 161 and 157 respectively. However, “insect control” (s) was the lowest with involvement index of 71.

5.3.3 Relationship between the selected characteristics of the rural women and their involvement in homestead vegetable cultivation

Age, education, knowledge on homestead vegetable cultivation, annual family income and communication exposure had positive significant relationship with their homestead winter vegetable production. Family size and farm size had no significant relationship with their homestead winter vegetable cultivation.

Age, education, knowledge on homestead vegetable cultivation, annual family income, farm size and communication exposure had significant positive relationship

their involvement in homestead summer vegetable cultivation. Family size had significant relationship with their homestead summer vegetable cultivation.

education, knowledge on homestead vegetable cultivation, annual family income, farm size and communication exposure had significant positive relationship with their overall homestead vegetable cultivation. Family size had no significant relationship with their overall homestead vegetable cultivation.

4 Problem faced by the rural women to undertake the homestead vegetable cultivation

Among the twelve (12) problems of homestead vegetable cultivation, the top most important was: "Lack of quality seed and seedlings" with problem facing index (PEI) 439 and "Disease and insect infestation" with PFI of 415 ranked 1st, 2nd and 3rd respectively against the problem facing index (PFI) of 100 to 500. The least possible problem with PFI of 182 was "Lack of intensive case".

Conclusions

On the basis of the findings of the study and the logical interpretation of their meaning in the light of other relevant facts the researcher wish to draw the following conclusions:

1. The findings indicate that eighty one percent of the respondents were young to middle age and the rest were old aged. Age of the respondent had significant positive relationship with their winter, summer and overall homestead vegetable cultivation. Therefore, it is necessary to give special attention to middle-aged and old aged women by GOs and NGOs for homestead vegetable cultivation.
2. Majority (46 percent) of the respondent had primary level education. Education of the rural women showed a significant positive relationship with their involvement in homestead vegetable cultivation. This means that higher the education of the rural women higher was their involvement in homestead vegetable cultivation.

3. The findings indicate that 67 percent of the respondents had medium to large family. The family size of the respondents had no significant relationship with their homestead vegetable cultivation. Therefore, it may be concluded that the rural women who had small family involved more in homestead vegetable cultivation rather than large family.
4. More than 40 percent of the respondents had medium and 25 percent had high knowledge. Knowledge of the respondents had positive and significant relationship with their homestead vegetable cultivation. Therefore, it may be concluded that knowledge of the respondents should not be given a great importance in involving homestead vegetable cultivation.
5. More than seventy percent of the respondent had medium to high family income. Annual family income of the rural women and their involvement in homestead vegetable cultivation showed significant positive relationship. Until suitable efforts are made to increase family income of the rural women, their involvement in homestead vegetable cultivation will ever remain a far cry.
6. The findings indicate that 97 percent of the respondent had small to medium farm size. The farm size of the respondent had significant positive relationship with their involvement in homestead vegetable cultivation. Therefore, it may be concluded that the rural women had large farm size involved more in homestead vegetable cultivation.
7. The findings indicate that more than eighty percent of the respondent had low to medium communication exposure. Communication of the respondents had significant positive relationship with homestead summer vegetable cultivation. Hence, it may be concluded that communication makes on individual more aware about their needs and influence than in homestead summer vegetable cultivation.

5.5 Recommendations

5.5.1 Recommendations of policy implication

On the basis of findings and conclusions of the study and also on the present and past experiences, the following recommendations are presented below:

1. Education of the rural women showed significant positive relationship with homestead vegetable cultivation. It is therefore, recommended that all GOs and NGOs to take steps for widening literacy programmer for intensive homestead vegetable cultivation.
2. Annual family income of the rural women had a significant positive relationship with homestead vegetable cultivation. It is therefore,, recommended that all GOs and NGOs should take more effective steps for increasing income of the rural women by creating greater opportunities for their income generating activities.
3. Extension service should be strengthened particularly for rural women. Due to social system and religion, rural women are reluctant to come in contact with male extension worker. So, more women extension workers are to be engaged for effective and successful implication of the development activities.
4. Local extension workers should have good rapport with the rural women.
5. Extension workers must be well trained on the newly released vegetable cultivation practices/ techniques as well as the running techniques so as 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.

5.5.2 Recommendations of further study

1. The present investigation explored the relationships of seven selected characteristics of the rural women with their involvement in homestead vegetable cultivation. But besides these characteristics, there might be several other characteristics and situational factors which might have influence then in involvement in homestead vegetable cultivation. Therefore, there is a further need for exploring the relationships of other characteristics such as marketing and processing opportunities for the rural women with their involvement in homestead vegetable cultivation.
2. Involvement is the measurement of implementation of technologies by the rural women. It is a continuous process due to change of social system, change

of technologies, change human behavior, change of involvement patterns etc. so, it is suggested that there should be continuous involvement research in various aspects of homestead vegetable cultivation.

3. Involvement of rural women in homestead vegetable cultivation may be determine by using other ways and methods which may be used in conducting further research.
4. A study on problem faced by the involving member of homestead vegetable cultivation can also be undertaken.
5. The study was conducted on female farmers but male farmers are equally important. So, a similar study may be conducted with male farmers.
6. Finally, this is a micro level study only two selected village of Badarganj upazila under Rangpur district. So, findings of this study need verification by similar research in other parts of the country.

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APPENDIXES

Appendix I

(English version of the interview schedule)

Department of Agricultural Extension and Information System
Sher-e-Bangla Agricultural University, Dhaka.

“Involvement of Rural Women in Homestead Vegetable Cultivation in a Selected
Area of Badarganj Upazila under Rangpur District”

Sample no:

Date:

Respondent's Name:

Village:

Upazila:

District:

(Please answer the following questions / put tick mark as appropriate)

1. Age: What is your present ageyear.
2. Level of education: a) Do not know reading and writing
b) I have passed ----- class
3. Family size: How many members are there in your family:no. members
4. Farm size: Please mention the area of your land according to use

Sl.No.	Type of land use	Land are	
		Local unit	Hectare
1.	Homestead area		
2.	Own land under own cultivation		
3.	Land taken from others on borga		
4.	Land given to others on borga		
5.	Land taken on lease		
6.	Total = 1 + 2 + $\frac{1}{2}$ (3+4) + 5		

5. Family income: How much money you received from the following sources last year

A. Income from agricultural sources

Sl. No.	Income sources	Production (40 kg)	Value per unit (Tk)	Total income (Tk)
1.	Rice			
2.	Wheat			
3.	Jute			
4.	Sugarcane			
5.	Potato			
6.	Pulse crops			
7.	Vegetables			
8.	Livestock			
9.	Poultry			
10.	Fisheries			
11.	Others (specify)			
12.	Sub total (A)			

B. Income from non-agricultural sources

Sl. No.	Sources of income	Total value (Tk)
1.	Service	
2.	Business	
3.	Day labour	
4.	Others (specify)	
	Sub total (B)	

Total income = A + B = Tk

6. Communication exposure: Please indicate how you are being influenced by the following communication media

Name of the communication media		Extent of communication			Not at all
		Frequently	Occasionally	Rarely	
Personal media					
1.	Upazila Agriculture officer	≥ 3times/year	2times/year	1times/year	
2.	Agriculture extension officer	≥ 3times/year	3-4times/year	1-2times/year	
3.	Sub Assistant Agriculture officer	≥ 6times/year	4-5times/year	1-3times/year	
4.	Local leader	≥ 5times/month	3-4times/year	1-2times/year	
5.	NGO worker	≥ 5times/ month	3times/year	1-2times/year	
6.	Input dealers	≥ 5times/ month	3-4 times/year	1-2times/3month	
7.	Experienced farmer	≥ 5 times/ month	3-4times/year	1-2times/year	
8.	Neighbors	≥ 5times/week	3-4times/year	1-2times/year	
9.	Relatives	≥ 4times/year	2-3times/week	1-2times/week	
Group media contact					
10.	Group discussion	≥ 5times/6year	3-time/6month	1-2time/6month	
11.	Field day	≥ 3 times/year	2times/year	1times/year	
12.	Result demonstration	≥ 1 times/year	1times/2year	1times/year	
13.	Method demonstration	≥ 1 times/year	1times/2year	1times/3year	
14.	Agricultural training	≥ 4 times/life	2-3 times/lief	1times/lief	
Mass media contact					
15.	Daily news paper	≥ 5times/week	3-4times/week	1-2times/week	
16.	Radio	≥ 5times/week	3-4times/week	1times/week	
17.	Television	≥ 5times/month	3-4time/month	1-2times/month	
18.	Poster	≥ 5times/year	3-4times/year	1-2times/year	
19.	Leaflet	≥ 5times/year	3-4times/year	1-2times/year	
20.	Magazine	≥ 5times/year	3-4times/year	1-2times/year	
21.	Agriculture fair	≥ 4 times/year	1 times/year	1 times/3year	
22.	Agri. film	≥ 1times/year	2times/3years	1times/year	

7. Knowledge on homestead vegetable cultivation: Please answer the following questions

Sl. No.	Question	Full marks	Marks obtained
1.	Which place do you like best for homestead vegetable cultivation?	4	
2.	How do you prepare land to cultivate homestead vegetables cultivation.	4	
3.	Mention the name of two insecticides for controlling insect pest of vegetables.	4	
4.	Mention the name of four winter vegetables.	4	
5.	Mention the name of four summer vegetables.	4	
6.	Mention the name of two leafy vegetables.	4	
7.	Mention the name of two vegetables which needs support to grow up.	4	
8.	Mention the name of two vegetables which needs no support to grow up.	4	
9.	What types of fruit trees are planted in homestead area?	4	
10.	Mention the name of two vitamin-A containing vegetables.	4	
	Total	40	

8. Involvement of rural women in homestead vegetable cultivation:

a) Involvement of rural women in homestead winter vegetable cultivation

i) Please indicate your extent of participation in the following winter vegetable production

Sl. No.	Name of the vegetable	Extent of production			
		1 year	2 year	3-5 year	≥ 5 year
1.	Cauliflower				
2.	Cabbage				
3.	Brinjal				
4.	Potato				
5.	Tomato				
6.	Bengal spinach				
7.	Radish				
8.	Battle gourd				

ii) Please indicate your extent of involvement in the following operations of winter vegetable cultivation

Sl. No.	Item / Operation	Extent of involvement		
		Regular	Occasional	Never
1.	Bed preparation			
2.	Seed sowing			
3.	Transplanting of seedling			
4.	Fertilizer application			
5.	Irrigation			
6.	Drainage			
7.	Weeding			
8.	Insect control			
9.	Seed collection			
10.	Seed preservation			

b) Involvement of rural women in homestead summer vegetable cultivation

i) Please indicate your extent of involvement in the following summer vegetable cultivation

Sl. No.	Name of the vegetable	Extent of involvement			
		1 year	2 year	3-5 year	≥ 5 year
1.	Sweet gourd				
2.	Pointed gourd				
3.	Bitter gourd				
4.	Ridge gourd				
5.	Snake gourd				
6.	Okra				
7.	Wax gourd				
8.	Teasle gourd				

ii) Please indicate your extent of involvement in the following operations of summer vegetable cultivation

Sl. No.	Item / Operation	Nature of involvement		
		Regular	Occasional	Never
1.	Pit preparation			
2.	Seed sowing			
3.	Irrigation			
4.	Drainage			
5.	Weeding			
6.	Fertilizer application			
7.	Insect control			
8.	Support arrangement for creeper			
9.	Seed collection			
10.	Seed preservation			

9. Please indicate the problems that you usually face to undertake the homestead vegetable cultivation

Sl. No.	Item / Operation	Extent of involvement					
		Very high	High	Medium	Low	Very low	No problem at all
1.	Lack of quality seeds and seedling						
2.	Lack of required information in time						
3.	Insect and disease infestation						
4.	Lack of processing of produced vegetable						
5.	Do not get market price						
6.	Cattle and goat destroy the vegetable						
7.	Soil quality in homestead area is not good						
8.	Lack of intensive care						
9.	Lack of money for buying seeds, seedlings and other vegetables						
10.	Lack of credit						
11.	Lack of knowledge for fertilizer application in time						
12.	Lack of knowledge for pesticide application in time						

Thank you very much for your kind cooperation

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Date.....

Signature of the interviewer

APPENDIX II Correlation Matrix of the dependent and independent variables (N=100)

	X ₁	X ₂	X ₃	X ₄	X ₅	X ₆	X ₇	X ₈	Y ₁	Y ₂	Y ₃
X ₁	1.000										
X ₂	0.263**	1.000									
X ₃	0.227*	-0.035	1.000								
X ₄	0.100	0.243*	-0.044	1.000							
X ₅	0.158	0.681**	0.085	0.302**	1.000						
X ₆	0.228*	0.531**	-0.030	0.317**	0.718	1.000					
X ₇	0.231*	0.573**	0.077	0.304**	0.743**	0.726**	1.000				
X ₈	0.081	0.141	-0.047	-0.033	0.280**	0.444**	0.384**	1.000			
Y ₁	0.219*	0.410**	-0.061	0.118	0.463**	0.459**	0.499**	0.191	1.000		
Y ₂	0.332**	0.705**	0.032	0.243*	0.736**	0.544**	0.620**	0.11	0.546**	1.000	
Y ₃	0.317**	0.643**	-0.014	0.209*	0.69**	0.573**	0.640**	0.169	0.865**	0.892**	1.000

* Correlation is significant at 0.05 level of probability; ** Correlation is significant at 0.01 level of probability

LEGEND

X₁ = Age

X₂ = Education

X₃ = Family size

X₄ = Farm size

X₅ = Annual family income

X₆ = Communication exposure

X₇ = Knowledge about homestead vegetable cultivation

X₈ = Problem faced by the rural women

Y₁ = Involvement in winter vegetable cultivation

Y₂ = Involvement in summer vegetable cultivation

Y₃ = Involvement in homestead vegetable cultivation