PARTICIPATION OF RURAL WOMEN IN HOMESTEAD VEGETABLE CULTIVATION OF NABINAGAR UPAZILA UNDER BRAHMANBARIA DISTRICT

A Thesis

By

NOWSHIN JAHAN

MASTER OF SCIENCE IN AGRICULTURAL EXTENSION AND INFORMATION SYSTEM

DEPARTMENT OF
AGRICULTURAL EXTENSION AND INFORMATION SYSTEM
SHER-E-BANGLA AGRICULTURAL UNIVERSITY
DHAKA-1207

DECEMBER 2014

PARTICIPATION OF RURAL WOMEN IN HOMESTEAD VEGETABLE CULTIVATION OF NABINAGAR UPAZILA UNDER BRAHMANBARIA DISTRICT

By

NOWSHIN JAHAN

Reg. No. 08-03162

A thesis
Submitted to the Department of Agricultural Extension and Information System
Sher-e-Bangla Agricultural University, Dhaka
In partial fulfillment of the requirements
For the degree of

MASTER OF SCIENCE (MS)
IN
AGRICULTURAL EXTENSION AND INFORMATION SYSTEM

SEMESTER: July-December, 2014

APPROVED BY

Prof. Dr. Md. Rafiquel Islam	**Prof. Md. Shadat Ulla**
Supervisor	Co-Supervisor
Dept. of Agricultural Extension and Information System	Dept. of Agricultural Extension and Information System
Sher-e-Bangla Agricultural University	Sher-e-Bangla Agricultural University
Dhaka	Dhaka

Dr. Mohummed Shofi Ullah Mazumder
Chairman
Examination Committee
Dept. of Agricultural Extension and Information System
Sher-e-Bangla Agricultural University

DEPARTMENT OF AGRICULTURAL EXTENSION AND INFORMATION SYSTEM
Sher-e-Bangla Agricultural University
Sher-e-Bangla Nagar, Dhaka-1207

CERTIFICATE

This is to certify that the thesis entitled **"Participation of Rural Woman in Homestead Vegetable Cultivation of Nabinagar Upazila under Brahmanbaria 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 and Information System**, embodies the result of a piece of bona fide research work carried out by **Nowshin Jahan**, Registration No. **08-03162** under my supervision and guidance. No part of the thesis 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 has been duly acknowledged.

Dated:
Dhaka, Bangladesh

Prof. Dr. Md. Rafiquel Islam
Supervisor
Department of Agricultural Extension and Information System
Sher-e-Bangla Agricultural University
Sher-e-Bangla Nagar, Dhaka-1207


Dedicated
To
My Beloved
Parents

ACKNOWLEDGEMENT

All praises are due to almighty the merciful Allah, who enabled the researcher to complete the study successfully. Guidance, help and co-operation have been received from several persons or authority during the tenure of the study; the author is immensely grateful to all of them.

The author with a sense of respect, expresses her heart felt gratitude to her Supervisor Professor Dr. Md. Rafiquel Islam, Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka for his untiring and painstaking guidance, innovative suggestions, continuous supervision, timely instructions and inspirations throughout the tenure of research work.

Heartfelt gratitude and profound respect to her Co-supervisor Prof. Md. Shadat Ulla, Department of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka for his constructive criticism, valuable suggestions and co-operation throughout the study period. The author also expresses her profound respect and sincere gratitude to the Chairman and all other teachers of Department of Agricultural Extension & Information System, Sher-e-Bangla Agricultural University, Dhaka for their co-operation and suggestions.

The author is grateful to Agriculture Extension Officer and Sub Assistant Agriculture Officers of Nabinagar upazila under Brahmanbaria district for rendering co-operation during the field work. Special thanks to the rural women, who were the respondents of the study area and gave their valuable time for interview during collection of data.

The author takes the opportunity to express her indebtedness and profound respect to her beloved father Asadul Hakim, mother Raihan Akhter, husband Ferdaus Alam , aunt Begum Kamrun Nahar, cousin Abdullah Al Shahid & Nishat Jahan Mitu and other relatives for their blessings, sacrifices, financial support and encouragement for higher study which can never be forgotten.

Last but not the least, author is also grateful to Mona, Mili and Hira for their help and inspiration during the period of the study. Finally, author expresses her gratefulness to Asadul Hakim for his valuable inspiration, encouragement and cooperation for this research work.

The Author

CONTENTS

CONTENTS (Contd.)

CONTENTS (Contd.)

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

ABSTRACT

The main purpose of this research was to assess the extent of participation of rural women in homestead vegetable cultivation and to explore the relationship between each of the selected characteristics of the rural women and their extent of participation in homestead vegetable cultivation. The study was conducted in five villages of Nabinagar upazila under Brahmanbaria district. The populations of rural women in homestead vegetable cultivation in these villages were 594, from which 120 samples were selected proportionally. An interview schedule was used for data collection. The data were collected during 18th July, 2014 to 25th August, 2014. Appropriate scales were developed in order to measure the variables. Majority (62.5%) of the respondent had medium participation in winter homestead vegetable cultivation as compared to 30 percent low participation and 7.5 percent high participation. The highest proportion (73.3%) of the respondent had medium participation in summer homestead vegetable cultivation as compared to 22.5 percent low participation and 4.2 percent high participation. The highest proportion (52.5%) of the respondent had medium participation in homestead vegetable cultivation as compared to 36.7 percent low participation and 10.8 percent high participation. Correlation analysis indicated that five out of eleven independent variable namely farm size, extension contact, agricultural training, decision making role and innovativeness had significant positive relationship with their homestead vegetable cultivation. Other variables namely age, level of education, family size, family income, knowledge of homestead vegetable cultivation and cosmopoliteness had no significant relationship with their homestead vegetable cultivation. Among the ten selected problem 'lack of credit' was ranked first followed by 'lack of technical knowledge', 'insect and disease infestation', 'higher price of inputs', 'lack of quality seeds and seedlings', 'cattle and goat destroy the vegetables' 'lack of homestead land', 'lower fertility of homestead land' and 'lower market price of products' while 'lack of required information in time' had the last position in order of ranking.

CHAPTAR 1
INTRODUCTION

1.1 General Background

Bangladesh is one of the poorest and most densely populated countries in the world with an estimated average population density of around 1015 inhabitants per square kilometer (Population and Housing Census 2011). Due to poverty, majority of its population, particularly women and children suffer from severe malnutrition.

Bangladesh is basically an agricultural country. The economy of Bangladesh is largely dependent on agriculture. Bangladeshi women play a significant part in agriculture production. Although rice is the dominant crop, vegetable occupy a very important place in rice-based cropping systems and play a distinct role in the crop sub-sector to provide nutrition, enhance food security and uplift economic benefits to the producers. Vegetables are essential in diet, provide fiber, trace minerals, vitamins, carbohydrates and proteins. Vegetables help to prevent various diseases resulting from malnutrition and unbalanced nutrition. Home gardening can play a very important role to improve the nutrition level in the country which is almost overlooked by producing vegetable. In Bangladesh a good amount of vegetable are grown throughout the year. In view of increase in income, population and nutritional consideration, there is a great need for vegetable cultivation.

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

Many vegetables are grown in homestead. Homestead is the dwelling place and it is the centre where vegetables are cultivated. Homestead as defined by Abdullah (1986) is the land owned and occupied by the dwelling unit of the household and immediate area surrounding by the dwelling unit including courtyard, pond, road space around homestead, space used for cultivation of trees and vegetable and unutilized space. Cultivable land is a scarce resource in densely populated Bangladesh, which is mostly used for production of rice and other field crops. However, many small homesteads of Bangladesh remains unutilized, underutilized or not scientifically managed, which could be brought under round the year vegetable cultivation for reducing the above mentioned problems. Many vegetable are in homestead such as cabbage, carrot, eggplant, cauliflower, potato, tomato, radish, sweet gourd, wax gourd, bitter gourd, teasel gourd, point gourd etc. not much care is taken for growing these vegetable in Bangladesh. Little attention is given to cultivate these vegetables, though these are very important source of human nutrition. There is a great scope for increasing the production of vegetable throughout the year. The benefit that can be obtained by growing more vegetables may be as follows: sources of high economic benefit, substitute of grain as crop, utilization of fallow land, vegetable export, agro-based industry and health-improvement etc.

The total production of vegetable during the period from 2003-04 to 2010-11 is shown in Table 1.1.

Table 1.1 Vegetable Productions in Bangladesh, 2003-04 to 2010-11

Year	Production (thousand MT)
2003-04	5621
2004-05	6531
2005-06	5952
2006-07	6967
2007-08	8685
2008-09	7373
2009-10	10158
2010-11	10516

Source: Agricultural Statistics, BBS, 2011

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

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

As of the 2011 Bangladesh census, women constitute nearly half (49.94%) of the total population and 80% of them live in the rural areas (AIS, 2004). Approximately 45% of our rural people are landless and about 55% of the land owners are small farmer. Women from these landless and marginally landless rural families cultivate different kinds of vegetable. Undoubtedly, women can play a vital role if their full talent can be explored. If women can perform their roles in homestead vegetable cultivation properly and skillfully, they will be able to ensure food security and family nutrition, increase family income and contribute to the overall improvement of Bangladesh.

Considering this fact the researcher is persuaded to conduct the research on **'Participation of Rural Woman in Homestead Vegetable Cultivation of Nabinagar Upazila under Brahmanbaria District'**.

1.2 Statement of the Problem

'Participation' refers to one's involvement in an events, thing or situation. Participation of the rural women in homestead vegetable cultivation is very vital to agricultural development of Bangladesh, where an overwhelming majority of them live in rural areas who are very close to agricultural production system.

With a view to conduct an investigation on various aspects of homestead vegetable cultivation, the researcher undertook this piece of study entitled 'Participation of rural woman in homestead vegetable cultivation of Nabinagar upazila under Brahmanbaria district'. The purpose of this study was to know the answer of the following questions:

1. What is the extent of participation of the rural women in homestead vegetable cultivation?
2. What are the characteristics of the rural women?
3. What is the relationship between the selected characteristics of the rural women and their participation in homestead vegetable cultivation?
4. What are the problems faced by the rural women in homestead vegetable cultivation ?

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

1.3 Specific Objectives

The following specific objectives have been framed out in order to give proper direction to the research work:

1. To determine and describe the following selected characteristics of the rural women:
   a) Age
   b) Education
   c) Family size
   d) Family income
   e) Farm size
   f) Knowledge of homestead vegetable cultivation
   g) Cosmopoliteness
   h) Extension contact
   i) Agricultural training
   j) Decision making role
   k) Innovativeness
2. To assess the extent of participation of rural women in homestead vegetable cultivation
3. To explore the relationship between each of the selected characteristics of the rural women and their extent of participation in homestead vegetable cultivation
4. To identify the existing problems faced by the rural women in homestead vegetable cultivation

1.4 Justification of the Study

The major focus of the study is to assess the participation of rural women in homestead vegetable cultivation. Government and non-government organizations are currently putting effort and allocating resources for production oriented research and also encouraging the rural people to undertake homestead vegetable cultivation. So, evaluation of the participation of rural women in homestead vegetable cultivation is necessary. Considering the above findings, the researcher became interested to undertake a study to determine the participation of rural women in homestead vegetable cultivation.

1.5 Assumption of the Study

The researcher had the following assumptions in mind while undertaking this study:

1. The selected respondents were competent enough to reply the queries made by the researcher.
2. The responses furnished by the respondents were valid and reliable.
3. Information furnished by the respondents included in the sample was the representative opinion of the whole population of the study area.
4. The researcher who acted as interviewer was well adjusted to social and environment condition of the study area. Hence, the data collected by her from the respondents were free from bias.
5. All the data concerning the variables of the study were normally and independently distributed.

1.6 Scope of the Study

The findings of the study will be particularly applicable to the respondent of the 5 villages of Solimgonj union in Nabinagar upazila under Brahmanbaria district. However, the findings may also have implication to other areas of Bangladesh where the physical, socio-economic, cultural and geographical condition is similar with the study area. Thus, the findings are expected to be useful to the students, researcher and extension policy makers of different

nation buildings organization to improve techniques and strategies for effective extension work with the rural people, particularly with the rural women.

1.7 Limitation of the Study

In order to make the study manageable and meaningful from the point of view of research, it was necessary to impose some limitations as stated below:

1. The study was confined to five selected villages of Solimgonj union in Nabinagar upazila under Brahmanbaria district.
2. The characteristics of the respondent in the study area were many and varied but only eleven characteristics were selected for investigation in this study as stated in the objectives.
3. There were many rural women in Solimgonj union but only 120 respondents who participate in homestead vegetable cultivation were considered for this study.
4. This study included two types of vegetable which can be grown in homestead area, viz. i) Winter vegetable and ii) Summer vegetable.
5. Only 10 operations and cultivation of 10 vegetable were selected under each of the activities for measuring extent of participation.
6. The researcher relied on the data furnished by the respondent from their memory during interview.
7. For some cases, the researcher faced unexpected interference from the over interested side-talkers while collecting data from the target populations. However, the researcher tried to overcome the problem as far as possible with sufficient tact and skill.
8. Various problems in homestead vegetable cultivations are likely to be faced by the rural women. However, only ten problems have been considered for investigation in this study.

1.8 Definition of Related Terms

The terms which have been frequently used throughout the research work are defined and interpreted below:

Participation

It was considered to be an active process, meaning that the person or group in question took initiatives toward achieving something. Participation here meant to be involved in different affairs of homestead vegetable cultivation by rural women.

Vegetable

The farm vegetable in this study, referred to the edible parts of plants (root, steam, leaf, fruit etc.) which are eaten as cooked food and green salad.

Winter Vegetable

Those vegetable which are generally grown during October to March in Bangladesh have been termed as winter vegetable. In this study investigation has been conducted on ten selected winter vegetable namely- Brinjal, Bengal spinach, Battle gourd, Cabbage, Carrot, Cauliflower, Country been, Potato, Radish and Tomato.

Summer Vegetable

Those vegetable which are generally grown during April to September in Bangladesh have been termed as summer vegetable. In this study investigation has been conducted on ten selected summer vegetable namely- Amaranths, Bitter gourd, Indian spinach, Okra, Pointed gourd, Ridge gourd, Snake gourd, Sweet gourd, Teasel gourd and Wax gourd.

Participation of Vegetable Cultivation

This term referred to one’s decision to continue the cultivation of vegetable.

Rural Women

In the present study, rural women were housewives living in village and engaged in homestead vegetable cultivation directly or indirectly.

Respondent

Respondent referred to the women beneficiaries who were participated in homestead vegetable cultivation and were included to the sample.

Age

Age of a respondent was defined as the span of her life and was operationally measured by the number of years from her birth to the time of interview.

Education

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

Family Size

Family size of household 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 members of her family from agriculture and other sources (services, business, labor etc.) during a year.

Farm Size

It referred to the area of land owned by a woman or by her husband on which farming activities are carried out. A respondent was considered to have full benefit from cultivated area either owned by him/her or obtained on share cropping system. The areas are estimated in terms of full benefit to the women. The right of women on the land taken on lease or mortgage from others was regarded as ownership in estimating the farm size.

Knowledge on Homestead Vegetable Cultivation

It referred to the rationalistic understanding of the rural women about different activities related to homestead cultivation in the homestead area.

Cosmopoliteness

It refers to the frequency of movement of a rural woman to a distant place from her own village.

Homestead Area

In this study homestead area was considered as "A land adjoining area including garden, courtyard, pond and threshing floor. 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, goat shed, front yard, court yard and the area under vegetables, fruit trees, backyard bushes, bamboo bunches etc.

Extension Contact

The term extension contact refers to an individual access to or contact to the communication media and sources or any extension teaching methods being used for dispersion of new technologies among rural women.

Agricultural Training

It refers to the total number of days attended by the women in her life to the various agriculture related training courses.

Problem

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

Problem Faced

Problem faced refers to the problem are faced by the rural women for adopting homestead vegetable production techniques.

Decision Making Ability

Decision making ability means taking active participation of families on different aspects like crop production, agricultural goods, family household goods etc.

Innovativeness

Innovativeness referred to the degree to which a respondent was relatively earlier to accept innovations in terms of new ideas, practices and things than other members of her social system.

CHAPTER 2
REVIEW OF LITERATURE

In this chapter, reviews of the literature related to the study are presented. The researcher intensively searched internet, websites, available books, journals and printed materials from different sources of home and abroad. It may be relevant here to mention that a good number of research activities concerning participation of homestead vegetable cultivation have been made in many countries of the world. The researcher also reviewed the thesis containing in the digital agricultural thesis archival web portal of Bangladesh established by Ali (2012).

However, the literatures have been organized into following three sections to set the context of the study:

First section : Literatures on general context of homestead vegetable cultivation by rural women

Second section : Relationships between Selected Characteristics of the rural women and their participation in homestead vegetable cultivation

Third section : The Conceptual Framework of the Study

2.1 Reviews on Rural Women Participation in Homestead Vegetable Cultivation

Chowdhury (2009) conducted a study on participation of women in farm and non-farm activities in two villages of Sadar Upazilla of Mymenshingh district. This study showed that in case of both low and medium income households, female participation is moderately higher in non-farm activities than the high income households.

Nahar (2008) in her study in a selected area of Gazipur district observed that the involvement of rural woman in each of the homestead activities i.e. homestead vegetable cultivation, post-harvest activities, poultry raising and goat rearing and the extent of participation is high in all cases which is highly encouraging. In fact, these kinds of activities are mostly performed by the rural women in our country and have perfectly reflected in her study.

Uddin (2008) conducted a study among the women of Shariatpur district. He found that 68.63 percent of the respondent had medium and 31.37 percent had low involvement in home gardening practices.

Hasan (2006) observed that the highest proportion (98 percent) of conventional rural women had medium involvement in homestead activities. On-the other hand, cent percent of organic women farm workers had high involvement in homestead farming activities by organic women farm workers was significantly higher than that of conventional rural women's farming activities.

Ajayi (1995) performed analysis based on the descriptive examination of women's agricultural activities in four local government areas giving emphasis on market economy that features very prominently in national income accounting, erroneous belief that most rural women do not make an appreciable contribution to crop production is undetermined. He found that most women take part in planting, weeding, harvesting, and post-harvest activities of subsistence crops.

Akanda's (1994) study revealed that highest proportion of the rural women had high participation in vegetable cultivation while only 15 percent of them had high participation in the cultivation of fruit trees.

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

Vlassak (1993) observed that in third world countries, the role of women in agricultural production were extremely important. The tasks in agriculture as well as in food distribution and provide to women an income of their own, which was essential because of the increasing importance of money in developing countries. Women liked to increase agricultural production, but their activities were being impeded in different ways.

Akhter (1989) stated that women were involved in homestead agricultural production activities such as vegetable, fruits, timber, small animals (goat, sheep) and poultry to supply food and to increase family income.

Halim (1987) informed that women were potential producer of the homestead agricultural products and through their participation intensive homestead products may be produced. But due to lack of knowledge and utilization of proper technology and manageable practices the production remained below the expected level.

Dey (1985) mentioned in his paper that women in the households were economically active and played important role in post-harvest operations as well as other activities like kitchen gardening and livestock care.

Hossain (1985) mentioned in his paper that women were involved in most of the post-harvest operations of vegetables production. He also advocate some measures to be taken by the government, policy makers, planners, development workers and researchers for the effective integration of participation in different homestead production and management activities like vegetable growing, livestock raising, fish cultivation, post-harvest operation and household decision making.

2.2 Relationship between the Selected Characteristics of the Rural Women and their Participation

2.2.1 Age and Participation

Tazkira (2009) found in her study that age has a significant and positive relation with their extent of involvement in the homestead farming activities.

Rahman (2007) stated that majority of the rural women (46 percent) was middle-aged and its relationship with their participation in homestead agriculture activities. Comprised of either young or middle aged categories and its relationship with their involvement in home gardening practice were negatively significant.

Akhtaruzzaman (2006) stated in his study that there was a significant positive relationship between age of landless women and their functional participation in Income Generating Activities (IGAs).

Rahman (2006) indicate that 81 percent of the respondent were young to middle age and the rest were old aged. Age of the respondent had significant positive relation with their winter, summer, and overall homestead vegetable cultivation.

Khatun (2004) found in her study that there was no significant relationship between age of the rural women and their participation in homestead farming activities.

Nahar (2000) stated in her study that age of the rural women had no significant relationship with their participation in homestead agriculture.

Akanda (1994) mentioned that age of the rural women had significant positive relationship with their participation in homestead vegetable cultivation and in the cultivation of fruit trees but a negative correlation with non-farm household activities.

Akhter (1989) stated that there was positive correlation between age of the household women with their time spent in both agricultural and non-agricultural activities.

Sirohi (1985) reported that there were differences in operations among different age groups. Accordingly threshing and sowing belonged to the age group of 25-40 and less than 15 years, respectively.

Huq (1981) stated that 70 percent of women workers of he study belongs to the age group of 15-24 i.e. unmarried women spent more time than married women in labour force.

Iqbal (1963) in his study on farmer's attitude towards participation of modern agricultural practices reported that older farmers had more favourable attitudes to improved and modern agricultural practices.

Nair (1963) conducted a review of research done on method and procedure of adopting improved technology and farm practices and the relevant factors associated with them. He found age as one of the factors that influenced the farmers participation process.

2.2.2 Education and Participation

Tazkira (2009) stated that most of the rural women were educated up to primary level and education had significant and positive relationship with their extent of involvement in homestead farming activities.

Uddin (2008) in his statistical analysis showed a significant positive relationship of education of the rural women with their involvement in home gardening practices.

Aktaruzzaman (2006) revealed that there was non-significant relationship between education of landless women and their functional participation in income generating activities.

Rahman (2006) in his study found that majority (46%) of the respondent had primary level education. Education of the rural women showed a significant positive relationship with their involvement in homestead vegetable cultivation.

Aziz (2004) observed that the level of education of the tribal women had no relationship with their participation in homestead agriculture.

Akanda (2000) stated that education of rural women had significant positive relationship with their involvement in the cultivation of fruit trees. However, there was a positive relationship between education and vegetable cultivation.

Chowdhury (2000) in his study showed that education of the rural women had significant positive relationship with their opinion for 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 concluded that family education also had significant positive influence on the knowledge of farm women about homestead agriculture.

Akanda (1994) stated that education of rural women had significant positive relationship with their participation in the cultivation of fruit trees. However, there was a positive relationship between education and homestead vegetable cultivation and that of non-farm activities but was not significant statistically.

Karim (1993) observed that the level of agricultural knowledge increased with the increased education level. There was a positive trend of association between the farmer's education and their agricultural knowledge in sugarcane cultivation.

Kaur (1988) found that education influenced the opinion of the women about adoption of vegetable gardening, animal husbandry etc.

2.2.3 Family Size and Participation

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

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

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 goat rearing but she found a significant positive relationship between family size and participation in post-harvest practices.

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 household 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.

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

Akhter (1989) in her study found that family size of rural women had significant negative correlation with their attitude towards homestead production. She remarked that the household women with large family had low attitude towards homestead production because of heterogeneous opinions of the members of the large family.

Devi (1983) reported that family size had significant positive association with the farm and house management role performance of the rural women.

2.2.4 Family Income and Participation

Uddin (2008) in his study stated that annual family income of the respondent had negative and highly significant relationship with the involvement in home gardening practices. Therefore, he concluded that financial hardship of the respondent allowed them to access involvement in home gardening practices.

Ferdous (2007) in her study found that annual family income of the rural women had no significant relationship with their adoption of agricultural technologies.

Rahman (2006) found in his study that more than 70 percent of the respondent had medium to high family income. Annul family income of the rural women and their in homestead vegetable cultivation showed significant positive relation.

Aziz (2004) observed that family income of the tribal women had significant relationship with their extent of involvement in homestead farming activities.

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

Nahar (2000) observed in her study that family income of the rural women had no significant relationship with their participation in homestead agriculture.

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

Akhter (1989) found that household women having high income spent more time in personal activities like recreation, socio-cultural involvement and such other activities. Thus they spent little time in either agricultural or non-agricultural activities.

Sattar (1979) stated that women have a larger contribution to the country's economy but their contributions are not considered in the programs taken for the development of the country. Findings of the study revealed that women participate in the post harvest operations vegetable cultivation, fruit culture, livestock care etc. which have great contribution to the family income.

Ahmed (1977) found that income of the farmers had significant on the use of information sources in the adoption of plant protection measures.

2.2.5 Farm Size and Participation

Rahman (2007) showed that farm size of the rural women had positive significant relationship with their participation in homestead agricultural activities.

Rahman (2006) indicated that 97% 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.

Islam (2003) mentioned that farm size of the rural women had a negative relationship with their participation in goat rearing.

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

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

Saugwan *et al.* (1990) conducted a study on participation of women in farm activities and found that involvement of women decreased in farm activities with increasing farm size.

Akhter (1989) found in her study that the farm size of the respondent women had significant positive correlation with their time spent in agricultural activities. She remarked that the household women in rural areas with large farm size spent more time in agricultural activities.

Dixon (1988) mentioned from their research findings that women's work is positively associated with small size of land .Their participation falls with the emergence of commercialized relation in agriculture.

Ahsan et al. (1986) stated that participation of women in agricultural activities depended on the farm size of the family. Women having small farm were found to spend more time in crop sector while women with large sized farms spent

more time in homestead production. Besides, these landless women were found more associated with agricultural activities in order to generate direct income.

2.2.6 Knowledge of Homestead Vegetable Cultivation and Participation

Tazkira (2009) revealed in her study that knowledge about homestead farming had significant and positive relationship with their extent of involvement of the rural women in homestead agricultural activities.

Rahman (2007) indicated in his study that knowledge on homestead agricultural activities of rural women had positive significant relationship with their participation in homestead agricultural activities. And Nahar (2000) showed similar findings in their respective studies.

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

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.

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.

Akanda (1994) in his study found that agricultural knowledge of the rural women had positive relationship with their participation in the cultivation of fruit trees. But there was no significant difference in the participation of rural women in homestead vegetable cultivation and non-farm household activities because of their difference in education.

Parveen (1993) in her study recommended that knowledge had played a vital role in forming favourable attitudes towards the homestead agricultural production. The knowledge about homestead agricultural production activities should be offered trough training. Training facilities should be made available for the women regarding homestead agricultural production activities.

2.2.7 Cosmopoliteness and Participation

Nahar (2000) observed in her study that cosmopoliteness of the rural women had no significant relationship with their participation in homestead agriculture.

Akanda (1994) found that non-localite behaviour or cosmopoliteness of rural women was negatively correlated with their participation in homestead vegetable cultivation, cultivation of fruit trees and non-farm household activities.

Ahmed (1977) found no relationship between cosmopoliteness of the farmers and each of the adoption of recommended variety of jute, recommended dose of fertilizers and plant protection measure in jute cultivation.

Latif (1974) in his study found that there was a positive relationship between cosmopoliteness of the farmers and their communication exposure.

Karim (1973) found a significant positive relationship between cosmopoliteness of the transplanted aman rice growers and their adoption of fertilizers.

2.2.8 Extension Contacts and Participation

Tazkira (2009) indicated in her study that extension contact had significant and positive relationship with their extent of involvement of the rural women in homestead agricultural activities. Aziz (2004), Khatun (2004) and Islam (2003) observed similar findings in their respective studies.

Uddin (2008) stated in his study that extension contact had significant positive relationship with their participation in agricultural practices.

Nahar (2000), Nahar (1996), Karim (1993) and Kaur (1988) in a study observed that extension contact and mass media exposure had positively significant relationship with their participation in agricultural practices.

2.2.9 Agricultural Training and Participation

Ali (2012) indicated in his study that training exposure of the farmers had significant positive relationship with the participation in community development activities.

Hossain (2010) found that training exposure had significant relationship with their adoption in homestead fruit production activities.

Rahman (2007) stated that agricultural training of the rural women had positive significant relationship with their participation in homestead agricultural activities.

Islam (2003) in his study indicated that training had very strong significant association with their knowledge on vegetable production.

Parvin (1993) found that there was a positive relationship between training of the women and involvement with homestead cultivation. Training increases knowledge and develop awareness of respondent.

Verma et al. (1988) found there was significant change in attitude of rural women before training to after training in improved home making task.

Hossain (1981) found a positive relationship with training exposure and development of farming skill as well as involvement in farm activities as per training.

2.2.10 Decision Making Role and Participation

Karim (2008) showed in his study that decision making role had significant positive relationship with their extent of use of $IT_{s.}$

Ferdous (2007) showed in her study that 50 percent of the rural women had some role with medium to high categories in decision making in family and their decision making role had significant positive relationship with their adoption of technologies.

Islam (1996) reported in his study that the decision of the farmer had no relationship with their extent of use of indigenous technical knowledge.

2.2.11 Innovativeness and Participation

Akanda (1994) found that innovativeness of the rural women had positive relationship with participation in agricultural practices.

Kashem and Halim (1991) reported that innovativeness of the rural women had significant positive relationship with their self-confidence, use of communication media in adoption of modern rice technology, livestock production and adoption of total agricultural technology.

2.3 The Conceptual Framework of the Study

In scientific research, selection and measurement of variables constitute an important task. The conceptual framework of Rosenberg and Hoveland (1960) was kept in mind while framing the structural arrangement for the dependent and independent variables. The present study tried to focus two concepts: the first, the selected characteristics of rural women and the second, participation of the rural women at homestead vegetable cultivation. In view of prime findings, the researcher constructed a conceptual framework of the study which is presented in Figure 2.1.

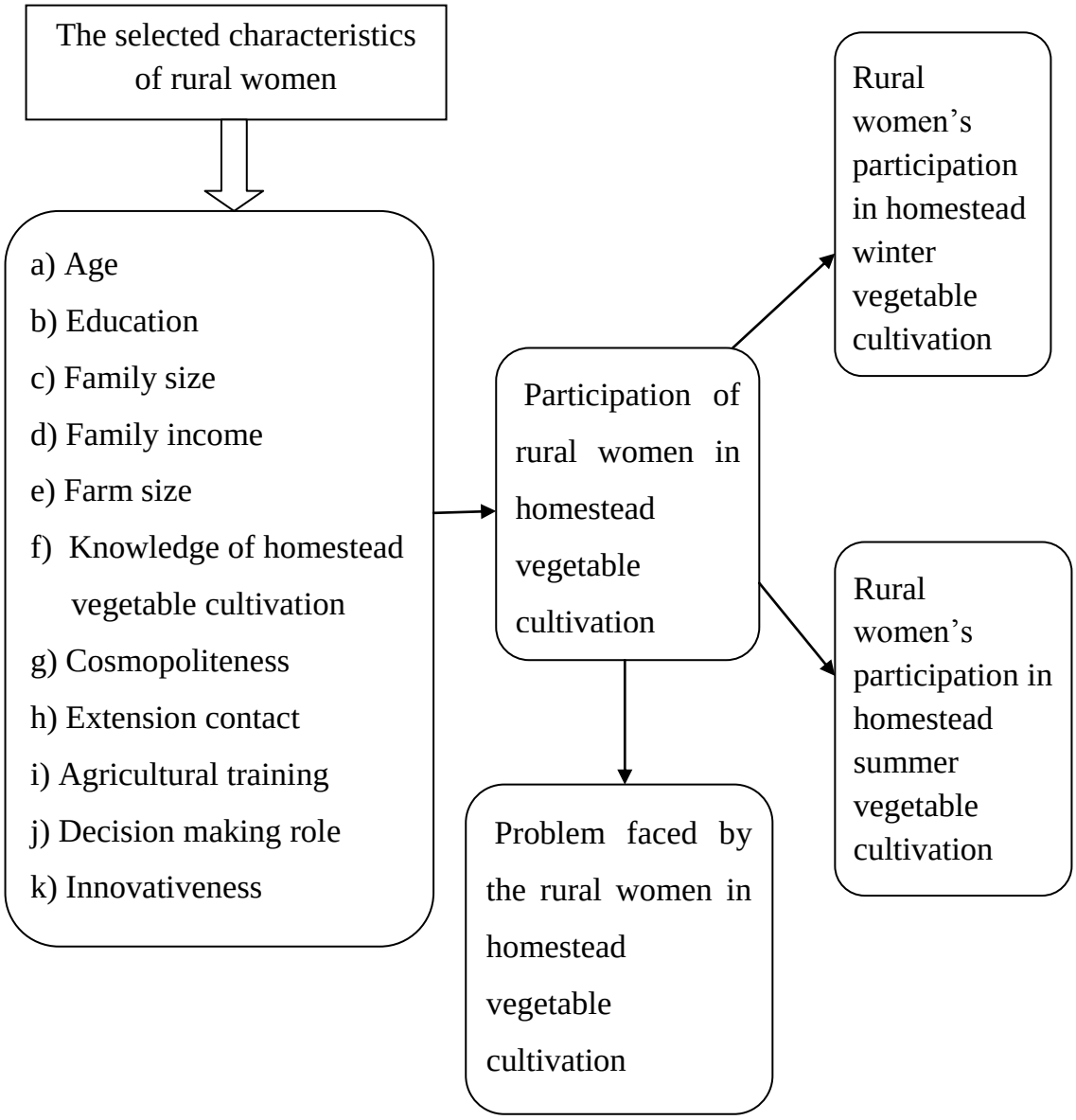

Fig. 2.1 The conceptual framework of the study

CHAPTER 3

MATERIALS AND METHODS

Methods and procedures used in conducting research need very careful consideration. Methodology should be such that enables the researcher to collect valid information and to analyze the same properly to arrive at correct decisions. The methods and procedures followed in conducting this research are being described below:

3.1 Locale of this Study

The study was conducted at five villages of Solimgonj union of Nabinagar upazila under Brahmanbaria district. Out of nine villages, five villages in Solimgonj were selected purposively. The selected villages were Badda, Bande Baher Char, Barail, Nilokhi, Kadoir. The study area is situated 27 km away from Nabinagar upazila. There are seven primary schools, two high schools and a college in the study area. There are also a post office and a big market in the study area. There are eleven mosques, two madrashas and one mondhir in thr study area. Various NGOs are working on homestead development activities at the study area. A map of Brahmanbaria district showing Nabinagar upazila is presented in Figure 3.1 and a map of Nabinagar upazila showing the study area is presented in Figure 3.2.

Figure 3.1: A map of Brahmanbaria district showing Nabinagar upazila

Figure 3.2: A map of Nabinagar upazila showing the study area

3.2 Population and Sample

The rural women of the selected five villages were considered as the population of the study. A list of rural women who are currently cultivating homestead vegetable was prepared with the help of Sub Assistant Agriculture Officer. The number of rural women of the selected five villages was 594 which constituted the population of the study. About 20 percent of the population was selected proportionally from the selected villages as the sample by following random sampling method. Thus, the total sample size stood at 118.8, but 120 rural women were taken as the sample of the study. Moreover, a reserved list of 13 rural women was prepared for use when the rural women under sample were not available during data collection.

The distribution of the rural women included in the population, sample and those in the reserve list appears in Table 3.1.

Table 3.1 Distribution of Population, Sample Size and Reserve List Size of Respondents in Five Selected Villages of Nabinagar Upazila of Brahmanbaria District

Sl. No.	Name of the Villages	Total number of the rural women	Sample Size	Number of rural women in the reserved list
1.	Badda	138	28	3
2.	Bande Baher Char	92	19	2
3.	Barail	98	20	2
4.	Nilokhi	126	25	3
5.	Kadoir	140	28	3
Total		**594**	**120**	**13**

3.3 Variables of the Study

Measurable characteristics of a population that may vary from element to element either in magnitude or in quality are called variables (Ahmed *et al*., 2004). The success of a research to a considerable extent depends on the exact selection of the variables. A research hypothesis contains at least two elements as independent variable and dependent variable. An independent variable is the factor which is manipulated by the experimenter to ascertain its relationship to an observed phenomenon. A dependent variable is the factor which appears, disappears or varies as the experimenter introduces, removes or varies the independent variable (Townsend, 1953). The dependent variable of the study is "Participation in homestead vegetable cultivation" and independent variables were: age, level of education, family size, family income, farm size, knowledge of homestead vegetables cultivation, cosmopoliteness, extension contact, agricultural training, decision making role and innovativeness.

3.4 Measurement of Variables

In order to conduct a study in accordance with the objectives it was necessary to measure the variables. The procedures of measuring the variables have been described below:

3.4.1 Measurement of Independent Variables

The independent variables of this study were eleven selected characteristics of rural women of Brahmanbaria district as mentioned earlier. Procedure for measuring independent variables has been discussed below:

3.4.1.1 Age

The age of a respondent was measured in terms of actual years from her birth to the time of interview on the basis of her response. A unit score was assigned for each year of one`s age (Akter, 2003). This variable appears in question no. 1 of the interview schedule.

3.4.1.2 Education

Education of rural women was measured by the number of years of successful schooling. A score of one was assigned for each year of formal schooling completed by a respondent (Sharmin, 2005). For example, if a respondent passed the SSC examination, he was given a score of 10. Besides, a respondent did not know how to read and write her education score was assigned as 0 (zero), a score of 0.5 was given to those respondent who did not know how to read and write but could sign her name only. This variable has been presented in the question no. 2 of the interview schedule.

3.4.1.3 Family Size

The family size of a respondent was measured by the total number of her family members including herself, her husband, children and other dependents eating and staying together. This variable has been shown in the question no. 3 of the interview schedule.

3.4.1.4 Family Income

Family income of a respondent was measured on the basis of total yearly earning from agriculture and other sources (service, business, daily labor etc.) by the respondent herself and other family members. For calculation of income score, one (1) score was assigned for each one thousand taka (question no. 4 of the interview schedule). For example, if a respondent mentioned that her annual family income is Tk. 1, 75,000 then her annual family income score would be 175.

3.4.1.5 Farm Size

Farm size was measured as the size of her farm on which rural women continued her farming operations during the period of study. It included the area of homestead, land cultivation under her or her family cultivation as well as those obtained from others as borga, lease and also given to others as borga.

The area was measured in terms of hectare. The farm size of a respondent was measured by using the following formula:

$FS = A + B + 1/2(C + D) + E$

Where

FS = Farm size

A= Homestead area (including pond & garden)

B= Land under own cultivation

C= Land given to others on borga

D= Land taken from others on borga

E= Land taken from others on lease

Actual size of the farm was considered as the score of the farm size. For example if a respondent had 0.05 ha of land then his score was 0.05. The data were first recorded in local unit and then converted to hectare (question no. 5 of the interview schedule).

3.4.1.6 Agricultural Knowledge

Agricultural knowledge of the respondents was measured by asking 15 (fifteen) selected questions and 2 score was assigned to each of the questions. Full marks was given to appropriate answer and partial score was given for partially correct answer whereas 0 (zero) score was given to wrong or no answer. Agricultural knowledge score could range from 0 to 30 where 0 indicated very low knowledge to 30 indicated very high knowledge (question no. 6 of the interview schedule).

3.4.1.7 Cosmopoliteness

Cosmopoliteness of a respondent was measured by computing a cosmopoliteness score. The cosmopoliteness score was assigned on the basis of places and frequency of her visit external to her own social system. The seven places including outside own village, other union, own

upazila, other upazila, own district town and other district town and capital city. Cosmopoliteness score was computed in the following manner.

Place of visit	Scoring system
1. Visit to other villages	0 = Not even once a month 1 = 1 time/ month 2 = 2-3 times/ month 3 = 4 times or above/month
2. Visit to other union	0 = Not even once a month 1 = 1-2 times/month 2 = 3-5 times/month 3 = 5 times or above/ month
3. Visit to own upazila sadar	0 = Not even once a month 1 = 1 time/ month 2 = 2-3 times/ month 3 = 4 times or above/month
4. Visit to other upazila sadar	0 = Not even once a year 1 = 1 time/year 2 = 2 times/ year 3 = 3 times or above/ year
5. Visit to own district town	0 = Not even once a year 1 = 1 time/ year 2 = 2-3 times/ year 3 = 4 times or above/ year
6. Visit to other district town	0 = Not even once a year 1 = 1 time/ year 2 = 2 times/year 3 = 3 times or above/ year
7. Visit to capital city (Dhaka)	0 = Not even once a year 1 = 1 time/ year 2 = Twice a year 3 = 3 times or above / year

The score obtained for all the 7 items were added together to get the cosmopoliteness score of an individual. The cosmopoliteness score of the farmers ranged from 0 to 21 where 0 indicating no cosmopoliteness and 21 indicating very high cosmopoliteness (question no. 7 of the interview schedule).

3.4.1.8 Extension Media Contact

It was measured as one's extent of exposure with different information sources. It was assumed that the more contact an individual would have with different information sources, the more she becomes educated and knowledgeable. An extension contact score was computed for each respondents of her extent of contact with 15 selected media. Each respondent was asked to mention the frequency of her contact with each of the 15 selected media. The scale used for computing the extension contact score of a respondent is given below:

Sl. No.	Type of Extension Media	Extent of use	Score
1.	Sub Assistant Agriculture Officer(SAAO) per month	Not even once 1 time 2-3 times 4 or more times	0 1 2 3
2.	Agricultural Extension Officer (AEO) per year	Not even once 1 time 2 times 3 or more times	0 1 2 3
3.	Upazila Agriculture Officer (UAO) per year	Not even once 1 time 2 times 3 or more times	0 1 2 3
4.	Local leader per month	Not even once 1-2 time 3-4 times 5 or more times	0 1 2 3
5.	Seed/ Fertilizer dealer per month	Not even once 1-2 time 3-4 times 5 or more times	0 1 2 3
6.	Group discussion per year	Not even once 1-2 time 3-4 times 5 or more times	0 1 2 3
7.	Field day per year	Not even once 1 time 2 times 3 or more times	0 1 2 3

8.	Result demonstration	Not even once 1 time per three years 1 time per two year 1 time per year	0 1 2 3
9.	Participation in Agricultural training course in life	Not even once 1 time 2-3 times 4 or more times	0 1 2 3
10.	Daily paper per month	Not even once 1-2 time 3-4 times 5 or more times	0 1 2 3
11.	Radio per week	Not even once 1-2 time 3-4 times 5 or more times	0 1 2 3
12.	Television per month	Not even once 1-2 time 3-4 times 5 or more times	0 1 2 3
13.	Poster per year	Not even once 1-2 time 3-4 times 5 or more times	0 1 2 3
14.	Leaflet per year	Not even once 1-2 time 3-4 times 5 or more times	0 1 2 3
15.	Agricultural fair	Not even once 1 time per three years 1 time per two year 1 time per year	0 1 2 3

The score obtained for all 15 selected media by a respondent were summed together to compute her extension exposure scores. The extension contact scores of the respondent could vary from 0 to 45 where, '0' indicating no extension contact and '45' indicating high extension contact (question no. 8 of the interview schedule).

3.4.1.9 Agricultural Training

Agricultural training score of a respondent was measured by the number of days that a respondent had received agricultural training in her entire life. It was indicated by the total number of days of receiving agricultural training by a respondent under different training programs. If a respondent did not participated any training courses her score was 0 and if a respondent attained 1 course with 5 days duration her assigned score was 5. If a respondent attained 2 courses with 5 days duration her assigned score was 10. This variable has been shown in the question no. 9 of the interview schedule.

3.4.1.10 Decision Making Role

Decision making role of rural women was measured by a scale with 4 options of 6 items. Here the score was 0 for no decision making role, 1 for taking decision by discussing with family members, 2 for taking decision discussing with husband and 3 for taking decision solely. Decision making role score ranged from 0 to 18 where 0 indicated no decision making role and 18 indicated highest decision making role. This variable has been shown in the question no. 10 of the interview schedule.

3.4.1.11 Innovativeness

Innovativeness is the degree to which an individual adopts an innovation relatively earlier than other members in a social system (Rogers, 1995). In this study, innovativeness of a respondent was measured on the basis of the period of 5 improved agricultural technologies (question no. 11 of the interview schedule). The scores were assigned on the basis of time required by an individual to adopt each of the technologies in the following manner:

Period of Adoption	Assigned Score
Within one year after awareness	5
After one year to within two year after awareness	4
After two year to within three year after awareness	3
After three year to within four year after awareness	2
After four year after awareness	1
No use	0

Innovativeness score of a respondent was obtained by adding her scores for adoption of all the 5 improved agricultural technologies. Innovativeness score of a respondent could range from 0 to 25, where, '0' indicating no innovativeness and '25' indicating very high innovativeness.

3.4.2 Measurement of Dependent Variable

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

a) Participation of Rural Women in Homestead Winter Vegetable Cultivation

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

Participation in winter vegetable cultivation score = $\sum$ OP $\times$ $\sum$ PP

Where,

OP = Operation participation score

PP = Production participation score

Operation participation score was computed in the following way:

Nature of participation	Score assigned
Never participation	0
Rarely participation	1
Occasional participation	2
Regular participation	3

As ten operations was considered in this study, the nature of participation score of a respondent could ranged from 0 to 30, while 0 indicates no participation and 30 indicates the highest participation in homestead cultivation in nature.

Production participation score was assigned in the following way:

Duration of production (Continuous)	Score assigned
1 year	1
2 year	2
3-5 year	3
Above 5 year	4

As 10 winter vegetables were selected for the study, production participation score of a respondent could ranged from 0 to 40, while 0 indicating no production participation and 40 indicating the highest production participation score. Thus participation of winter vegetable cultivation score of respondent could ranged from 0 to 1200, while 0 indicating no participation and 1200 indicating the highest participation in winter vegetable cultivation.

b) Participation of Rural Women in Homestead Summer Vegetable Cultivation

Participation of rural women in homestead summer vegetable cultivation of a respondent was measured by computing the nature of participation in 10 selected operations and production participation in 10 selected summer vegetable during last year. Scoring was made by following the formula developed by Alam (2001) for participation in summer vegetables cultivation. The measurement procedure of homestead summer vegetable cultivation was same as homestead winter vegetable cultivation. Thus participation of summer vegetable cultivation score of respondent could ranged from 0 to 1200, while 0 indicating no participation and 1200 indicating the highest participation in summer vegetable cultivation.

c) Participation of Rural Women in Homestead Vegetable Cultivation

Finally participation of rural women in homestead vegetable cultivation was measured by adding the participation of homestead winter and summer vegetable cultivation score.

Thus participation of homestead vegetable cultivation score of a respondent could ranged from 0 to 2400, while 0 indicating no participation and 2400 indicating the highest participation in homestead cultivation.

3.5 Measurement of Problem Faced by the Rural Women in Homestead Vegetable Cultivation

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

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

Where,

PFI= Problem Faced Index

P_4 = No. of the respondent faced very high problem

P_3 = No. of the respondent faced high problem

P_2 = No. of the respondent faced medium problem

P_1 = No. of the respondent faced low problem

P_0 = No. of the respondent faced no problem

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

3.6 Instruments for Data Collection

Data were collected using a structured interview schedule. Both open and closed form questions were included in the schedule based on the measurement procedures discussed earlier in section 3.4.

Before finalization, the interview schedule was pre-tested with 10 rural women of the study area. On the basis of the pre-test experiences necessary corrections, modifications and alterations were made before finalizing the interview schedule for final data collection. During modification of the schedule, valuable suggestions were received from the research supervisor and relevant experts. The interview schedule was then printed in its final form and multiplied. A copy of interview schedule in English version was placed in Appendix A.

3.7 Collection of Data

Data were collected personally by the researcher herself through face to face interview. To familiarize with the study area and for getting local support, the researcher took help from the local leaders and the field staffs of Upazila Agriculture Office. The researcher made all possible efforts to explain the purpose of the study to the farmers. Rapport was established with the farmers prior to interview and the objectives were clearly explained by using local language as far as possible. Data were collected during the period of 18th July, 2014 to 25th August, 2014.

3.8 Data Processing

After completion of field survey, all the data were coded, compiled and tabulated according to the objectives of the study. Local units were converted into standard units. All the individual responses to questions of the interview schedule were transferred in to a master sheet to facilitate tabulation, categorization and organization. In case of qualitative data, appropriate scoring technique was followed to convert the data into quantitative form.

3.9 Statistical Analysis

The data were analyzed in accordance with the objectives of the study. The statistical measures such as range, means, standard deviation, number and percentage distribution were used to describe the variables. Pearson's Product Moment Coefficient of Correlation (r) was used in order to explore the relationships between the concerned variables. Five percent (0.05) level of probability was the basis for rejecting any null hypothesis throughout the study. The SPSS computer package was used to perform all these process.

3.10 Statement of Hypothesis

As defined by Goode and Hatt (1952) 'A hypothesis is a proposition, which can be put to a test to determine its validity.' It may prove correct or incorrect of a proposition. In any event, however, it leads to an empirical test. Hypothesis are always in declarative sentence form and they relate either generally of specifically variables to sentence form and they relate either generally or specifically variables to variables. Hypothesis may be broadly divided into two categories, namely, research hypothesis and null hypothesis.

3.10.1 Research Hypothesis

Research hypothesis states a possible relationship between the variables being studied or a difference between experimental treatments that the researcher expects to emerge. The following research hypothesis was put forward to know the relationships between each of the eleven selected characteristics of the rural women and their participation in homestead vegetable cultivation. "Each of the eleven selected characteristics of the rural women will have significant relationship with their participation in homestead vegetable cultivation."

3.10.2 Null Hypothesis

A null hypothesis states that there is no relationship between the concerned variables. The following null hypothesis was undertaken for the present study “There is no relationship between the selected characteristics of rural women and their participation in homestead vegetable cultivation.” “The selected characteristics were age, level of education, family size, family income, farm size, knowledge of homestead vegetable cultivation, cosmopoliteness, extension contact, agricultural training, decision making role and innovativeness.”

CHAPTER 4
RESULTS AND DISCUSSION

The findings of the study and logical interpretations of the results have been presented in this chapter. Findings were recorded in accordance with the objective of the study. This chapter has been described in four sections. The first section deals with the selected characteristics of the respondents, while the second section deals with their extent of participation in homestead vegetable cultivation have been discussed. In the third section, the relationship between each the selected characteristics of rural women and their extent of participation in homestead vegetable cultivation has been discussed. The problem faced by the rural women in participating homestead vegetable cultivation has been discussed in the fourth section.

4.1 Selected Characteristics of the Rural Women

Eleven characteristics of the rural women were selected to find out their relationship with the participation of homestead vegetable cultivation. The selected characteristics included age, level of education, family size, family income, farm size, knowledge of homestead vegetables cultivation, cosmopoliteness, extension contact, agricultural training, decision making role and innovativeness. These characteristics of the rural women are described in this section. A summary profile of the characteristics of rural women (independent variables) is shown in table 4.1.

Table 4.1 Salient features of the selected Characteristics of the Rural Women (n=l20)

Sl. No.	Characteristics	Measuring unit	Possible range	Observed range	Mean	Standard deviation
1.	Age	Year	Unknown	22-58	34	8.28
2.	Level of education	Year of schooling	Unknown	0.50-12	7.29	3.13
3.	Family size	No. of member	Unknown	4-9	5.64	1.28
4.	Family income	'000' taka	Unknown	58.50-241.20	127.19	44.70
5.	Farm size	Hectare	Unknown	0.04-2.20	.70	0.40
6.	Knowledge of homestead vegetable cultivation	Score	0-30	10-27	17.01	3.69
7.	Cosmopoliteness	Score	0-21	6-17	10.65	2.28
8.	Extension contact	Score	0-45	9-34	17.65	4.55
9.	Agricultural training	No. of days	Unknown	0-6	1.91	1.67
10.	Decision making role	Score	0-18	6-16	11.50	1.82
11.	Innovativeness	Score	0-25	11-23	16.29	2.81

4.1.1 Age

The age of the rural women ranged from 22 to 58 years, with a mean with 34 years and the standard deviation was 8.28. On the basis of their age, the rural women were classified into three categories: "young" (up to 35), "middle aged" (36- 50) and "old aged" (above 50). The distribution of the rural women according to their age is shown in Table 4.2.

Table 4.2 Distribution of Rural Women According to their Age

Category	Rural Women		Mean	SD
	Number	Percent		
Young Aged (Up to 35)	79	65.8	34.0	8.28
Middle Aged (36-50)	34	28.3		
Old Aged (Above 50)	7	5.8		
Total	120	100.00		

Data presented in Table 4.2 indicated that the highest proportion (65.8 percent) of the respondents felt in the young aged category compared to 28.3 percent middle aged and 5.8 percent old aged category. The findings indicated that a large proportion of (94.1 percent) the rural women were young to middle aged. It was found that young aged respondents are more interested in participation in homestead vegetable cultivation. The extension agents can make using of these views and opinions in designing their extension activities.

4.1.2 Level of Education

The education score of the rural women ranged from 0.5-12, with a mean of 7.29 and standard deviation 3.13. Based on their education scores, the rural women were classified into five categories namely illiterate (0), can sign only (0.5), primary education (1-5), secondary education (6-10) and above secondary (above 10). The distribution of the rural women according to their education is shown in Table 4.3.

Table 4.3 Distribution of Rural Women According to their Education

Category	Rural Women		Mean	SD
	Number	Percent		
Illiterate (0)	0	0	7.29	3.13
Can sign only (0.5)	4	3.3		
Primary level (1-5)	31	25.8		
Secondary level (6-10)	70	58.3		
Above secondary level (above 10)	15	12.5		
Total	120	100.00		

Data presented in Table 4.3 shows that the highest proportion (58.3 percent) of the women belonged to the secondary education category compared to 25.8 percent and 12.5 percent of the rural women belonged to primary level and above secondary level education respectively. Rest 3.3 percent were can sign only. The findings indicated that a large proportion of (84.1 percent) the rural women were primary level to secondary level.

4.1.3 Family Size

Family size of the rural women ranged from 4-9, with a mean of 5.64 and standard deviation 1.28. Based on their family size scores, the rural women were classified into three categories namely small (up to 4), medium (5-7) and high (above 7). The distribution of the rural women according to their family size is shown in Table 4.4.

Table 4.4 Distribution of Rural Women According to their Family Size

Category	Rural Women		Mean	SD
	Number	Percent		
Small (Up to 4)	25	20.8	5.64	1.28
Medium (5-7)	88	73.3		
Large (Above 7)	7	5.8		
Total	120	100.00		

Data presented in Table 4.4 shows that the highest proportion (73.3 percent) of the women belonged to the medium families consisting of 5 to 7 members compared to 20.8 percent and 5.8 percent of the rural women belonged to small family and large family respectively. Women with medium family size spent more time in homestead vegetable cultivation compared to small and large family. The findings indicated that a large proportion of (94.1 percent) the rural women were medium family to small family.

4.1.4 Family Income

Family income of the respondents ranged from 58.50 to 241.20 with a mean of 127.19 and standard deviation of 44.70. Based on their family income, the respondents were classified into three categories: low income (up to100), medium income (100 - 220) and high income (above 220) which are shown in Table 4.5.

Table 4.5 Distribution of Rural Women According to Annual Income of their Family

Category	Rural Women		Mean	SD
	Number	Percent		
Low income (up to 100)	39	32.5	127.19	44.70
Medium income (100-220)	74	61.7		
High income (above 220)	7	5.8		
Total	120	100.00		

Data from Table 4.5 reveals that the highest proportion of the respondent (61.7 percent) had medium income while 32.5 percent had low income and only 5.8 percent had high income. In fact the overwhelming majority of the respondent (94.2 percent) women of the study area constituted medium to low income categories.

4.1.5 Farm Size

Farm size of the rural women ranged from 0.04 to 2.20 hectares and the mean was 0.70 hectares with standard deviation of 0.40. According to the farm size of the rural women, they were classified into four categories as suggested by DAE (1999) “Marginal (up to 0.2)”, “Small (0.21-1)”, “Medium (1.1-3)” and “Large (>3)”. The distribution of the rural women according to their farm size is shown in Table 4.6.

Table 4.6 Distribution of Rural Women According to their Farm Size

Category	Rural Women		Mean	SD
	Number	Percent		
Marginal (up to 0.2)	2	1.7	0.70	0.40
Small (0.21-1)	6	5		
Medium (1.1-3)	93	77.5		
Large (>3)	19	15.8		
Total	120	100		

The Table 4.6 shows that highest proportion of the women belongs to medium farm size category (77.5 percent) compared to 15.8 percent of them having large farm size, 5 percent of them having small farm size and only 1.7 percent had marginal farm size.

4.1.6 Knowledge of Homestead Vegetables Cultivation

Knowledge of homestead vegetables cultivation score of the rural women was computed on the basis of their knowledge about vegetable cultivation with 15 questions. Their score ranged from 10 to 27 against the possible range from 0 to 30. The average was 17.01 and standard deviation was 3.69. On the basis of knowledge of homestead vegetables cultivation scores, the rural women were categorized into three categories such as low knowledge (up to 14), medium knowledge (>14-20) and high knowledge (above 20). Table 4.7 represents the distribution of rural women according to their knowledge of homestead vegetable cultivation.

Table 4.7 Distribution of Rural Women According to their Knowledge of Homestead Vegetable Cultivation

Category	Rural Women		Mean	SD
	Number	Percent		
Low (up to 14)	19	15.8	17.01	3.69
Medium (>14-20)	77	64.2		
High (above 20)	24	20		
Total	120	100.00		

Data presented in the Table 4.7 revealed that the majority (64.2 percent) of the women had medium knowledge regarding vegetable cultivation compared to 20 percent had high knowledge of homestead vegetables cultivation and 15.8 percent of the respondent women had low vegetable cultivation knowledge. The data also reveals that majority (84.2 percent) of the rural women had medium to high knowledge of homestead vegetable cultivation. It was remarkable that the rural women of the study area were very conscious about homestead vegetable cultivation.

4.1.7 Cosmopoliteness

Cosmopoliteness of the respondents ranged from 6 to 17 with a mean of 10.65 and standard deviation of 2.28. Based on their cosmopoliteness, the respondents were classified into three categories: low cosmopoliteness (up to 7), medium cosmopoliteness (8 - 14) and high cosmopoliteness (above 14) which are shown in Table 4.8

Table 4.8 Distribution of Rural Women According to Cosmopoliteness

Category	Rural Women		Mean	SD
	Number	Percent		
Low cosmopoliteness (upto 7)	11	9.2	10.65	2.28
Medium cosmopoliteness (8-14)	104	86.7		
High cosmopoliteness (above 14)	5	4.2		
Total	120	100.00		

Data from Table 4.8 revealed that the highest proportion of the respondent (86.7 percent) had medium cosmopoliteness compared to 9.2 percent had low cosmopoliteness and 4.2 percent had high cosmopoliteness. In fact the overwhelming majority of the respondent (95.9 percent) are of the study area constituted medium to low cosmopoliteness.

4.1.8 Extension Contact

Extension contact scores of the respondent rural women were computed on the basis of their extent of contact of 15 sources of extension information The observed extension contact scores of the rural women ranged from 9 to 34 against the possible range from 0 to 45, the mean and standard deviation were 17.65 and 4.55 respectively. According to this score, the rural women were classified into three categories: “low extension contact” (up to 13), “medium extension contact” (14-26) and “high extension contact” (above 26). The distribution of the rural women according to their extension contact is shown in Table 4.9.

Table 4.9 Distribution of Rural Women According to their Extension Contact

Category	Rural Women		Mean	SD
	Number	Percent		
Low contact (Up to 13)	17	14.2	17.65	4.55
Medium contact (14- 26)	99	82.5		
High contact (Above 26)	4	3.3		
Total	120	100.00		

Data presented in Table 4.9 indicated that the highest proportion (82.5 percent) of the respondent women of the study area had medium extension contact compared to 14.2 percent of the respondents had low extension contact. Only 3.3 percent of the respondent women of the study area had high extension contact. The findings of the study also indicated that overwhelming majority (96.7) percent of the respondents had medium and low extension contact for getting necessary agricultural information. Extension contact is a very effective and powerful source of receiving information about various new and modem technologies.

4.1.9 Agricultural Training

The observed training exposure score of the rural women ranged from 0 to 6 with a mean of 1.91 and standard deviation of 1.67. Based on the training exposure scores, the rural women were classified into three categories: "no training" (0), "low training" (1-3) and "medium training" (above 3). The distribution of the rural women according to their agricultural training score is presented in Table 4.10.

Table 4.10 Distribution of Rural Women According to their Agricultural Training

Category	Rural Women		Mean	SD
	Number	Percent		
No training (0)	24	20	1.91	1.67
Low training (1- 3)	77	64.2		
Medium training (above 3)	19	15.8		
Total	120	100.00		

Data contained in Table 4.10 indicated that the highest proportion (64.2 percent) of the respondents was having low agricultural training exposure compared to 20 percent of them having no agricultural training. Only 15.8 percent had medium agricultural training. Training increases knowledge and skills of the rural women in a specific subject matter area. Individuals who gain medium agricultural training are likely to be more competent in performing in different activities. But the fact that rural women who received no training, need attention of the authorities of extension services (GOs and NGOs) in the country. Providing adequate training on appropriate subject matter is likely to increase the knowledge of the rural women.

4.1.10 Decision Making Role

The observed decision making role score of the respondents ranged from 6 to 16 against the possible range from 0 to 18 with a mean of 11.50 and the standard deviation of 1.82. On the basis of decision making ability they were classified into three categories: low decision making ability (up to 9), medium decision making ability (9-12) and high decision making ability (above 12). The distribution of the rural women according to their decision making role is shown in Table 4.11.

Table 4.11 Distribution of Rural Women According to their Decision Making Role

Category	Rural Women		Mean	SD
	Number	Percent		
Low (Up to 9)	8	6.6	11.50	1.82
Medium (9-12)	79	65.9		
High (Above 12)	33	27.5		
Total	120	100.00		

Data presented in Table 4.11 indicated that the highest (65.9 percent) of the respondents were having medium decision making role compared to 27.5 percent of them having high decision making role and 6.6 percent having low decision making role. Data also revealed that majority (93.4 percent) of the respondents had medium to high decision making role. So in the present context it can be said that women can contribute their valuable decision into their family in medium to high rate.

4.1.11 Innovativeness

The observed innovativeness score of the respondents ranged from 11 to 23 against the possible range from 0 to 25 with a mean of 16.29 and the standard deviation of 2.81. On the basis of innovativeness they were classified into three categories: low innovativeness (up to 14), medium innovativeness (15-20) and high innovativeness (above 20). The distribution of the rural women according to their innovativeness is shown in Table 4.12.

Table 4.12 Distribution of Rural Women According to their Innovativeness

Category	Rural Women		Mean	SD
	Number	Percent		
Low innovativeness (Up to 14)	34	28.3	16.29	2.81
Medium innovativeness (15-20)	77	64.2		
High innovativeness (Above 20)	9	7.5		
Total	120	100.00		

Data presented in the Table 4.12 showed that highest proportion (64.2 percent) of the women had medium innovativeness compared to 28.3 percent had low innovativeness and 7.5 percent high innovativeness. The table also showed that overwhelming majority (92.5) percent of the respondent women had medium to low innovativeness.

4.2 Participation of Rural Women in Homestead Vegetable Cultivation

Participation 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 4.13

Table 4.13 Summary Profile of Participation of Rural Women in Homestead Vegetable Cultivation

Dependent variables	Measuring units	Possible range	Observed range	Mean	Standard deviation
1.Participation in homestead winter vegetable cultivation	Score	0-1200	420-1008	655.07	104.82
2.Participation in homestead summer vegetable cultivation	Score	0-1200	357-1008	618.95	98.14
3.Participation in homestead overall vegetable cultivation	Score	0-2400	853-2016	1274.02	187.19

4.2.1 Participation of Rural Women in Homestead Winter Vegetable Cultivation

The participation scores of the rural women in homestead winter vegetable cultivation ranged from 420-1008 against possible range of 0-1200 with a mean of 655.07 and standard deviation of 104.82. On the basis of participation scores, the rural women were classified into three categories as low, medium and high participation and shown in Table 4.14.

Table 4.14 Classification of Respondent According of their Extent of Participation in Homestead Winter Vegetable Cultivation

Category	Rural Women		Mean	SD
	Number	Percent		
Low participation (Up to 600)	36	30	655.07	104.82
Medium participation (601-800)	75	62.5		
High participation (Above 800)	9	7.5		
Total	120	100.00		

Data presented in Table 4.14 shows that the highest percentage (62.5%) of the rural women had medium participation in winter vegetable cultivation compared to 30 percent of low participation and only 7.5 percent high participation. 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.

4.2.2 Participation of Rural Women in Homestead Summer Vegetable Cultivation

The participation scores of the rural women in homestead summer vegetable cultivation ranged from 357-1008 against possible range of 0-1200 with a mean of 618.95 and standard deviation of 98.14. On the basis of participation scores, the rural women were classified into three categories as low, medium and high participation and shown in Table 4.15.

Table 4.15 Classification of Respondent According of their Extent of Participation in Homestead Summer Vegetables Cultivation

Category	Rural Women		Mean	SD
	Number	Percent		
Low participation (Up to 550)	27	22.5	618.95	98.14
Medium participation (551-750)	88	73.3		
High participation (Above 750)	5	4.2		
Total	120	100.00		

Data presented in Table 4.15 shows that the highest percentage (73.3%) of the rural women had medium participation in summer vegetable cultivation compared to 22.5 percent of low participation and only 4.2 percent high participation.

4.2.3 Participation of Rural Women in Homestead Vegetable Cultivation

The participation scores of the rural women in homestead vegetable cultivation ranged from 853-2016 against possible range of 0-2400 with a mean of 1274.02 and standard deviation of 187.19. On the basis of participation scores, the rural women were classified into three categories as low, medium and high participation and shown in Table 4.16.

Table 4.16 Classification of Respondent According of their Extent of Participation in Homestead Vegetables Cultivation

Category	Rural Women		Mean	SD
	Number	Percent		
Low participation (Up to 1200)	44	36.7	1274.02	187.19
Medium participation (1201-1500)	63	52.5		
High participation (Above 1500)	13	10.8		
Total	120	100.00		

Data presented in Table 4.16 shows that the highest percentage (52.5%) of the rural women had medium participation in vegetable cultivation compared to 36.7 percent of low participation and only 10.8 percent high participation. Education and extension contact might be change attitude of clients radically and she becomes interested to participation with productive activities which has been reflected here.

4.3 Relationship between the Selected Characteristics of Rural Women and their Participation of Homestead Vegetable Cultivation

The purpose of this section is to explore the relationship between the selected characteristics of the rural women and their participation of homestead vegetable cultivation. The selected characteristics constituted the independent variables and the participation of homestead vegetable cultivation was the dependent variable.

Karl Pearson correlation co-efficient ‘r’ was used to test the null hypothesis between the two concerned variables. A hypothesis was rejected when the observed 'r' value was greater than the tabulated value of 'r' at 0.05 level of probability.

The summary of the results of the correlation co-efficient of the selected characteristics of the rural women with their participation of homestead vegetable cultivation have been presented in Table 4.17. The correlation matrix is presented in Appendix -B.

Table 4.17 Correlation Co-efficient of the Selected Characteristics of the Rural Women with their Participation in Homestead Vegetable Cultivation

Dependent Variable	Independent Variables	Correlation Co-efficient	Tabulated Value of 'r' at 118 degree of freedom	
			0.05 level	0.01 level
Participation of homestead vegetable cultivation by the rural women	Age	0.004^{NS}	0.179	0.234
	Level of education	0.128^{NS}		
	Family size	-0.069^{NS}		
	Family Income	0.132^{NS}		
	Farm Size	0.347**		
	Knowledge of homestead vegetables cultivation	0.171^{NS}		
	Cosmopoliteness	0.144^{NS}		
	Extension contact	0.226*		
	Agricultural training	0.246**		
	Decision making role	0.226*		
	Innovativeness	0.426**		

^{NS} Non significant

*Significant at 5 percent (0.05) level

** Significant at 1 percent (0.01) level

4.4.1 Relationship between the Selected Characteristics of the Rural Women and their Participation in Overall Homestead Vegetable Cultivation

Age and Participation in Homestead Vegetable Cultivation

The computed value of 'r' (0.004) was smaller than that of the tabulated value (r=0.179) with 118 degrees of freedom at 0.05 level of probability as shown in Table 4.17. Hence, the concerned null hypothesis was accepted and it was concluded that age of the rural women had no significant relationship with their participation in homestead vegetable cultivation.

Education and Participation in Homestead Vegetable Cultivation

The computed value of 'r' (0.128) was smaller than that of the tabulated value (r=0.179) with 118 degrees of freedom at 0.05 level of probability as shown in Table 4.17. Hence, the concerned null hypothesis was accepted and it was concluded that education of the rural women had no significant relationship with their participation in homestead vegetable cultivation.

Family Size and Participation in Homestead Vegetable Cultivation

The computed value of 'r' (-0.069) was smaller than that of the tabulated value (r=0.179) with 118 degrees of freedom at 0.05 level of probability as shown in Table 4.17. Hence, the concerned null hypothesis was accepted and it was concluded that family size of the rural women had no significant relationship with their participation in homestead vegetable cultivation.

Family Income and Participation in Homestead Vegetable Cultivation

The computed value of 'r' (0.132) was smaller than that of the tabulated value (r=0.179) with 118 degrees of freedom at 0.05 level of probability as shown in Table 4.17. Hence, the concerned null hypothesis was accepted and it was concluded that family income of the rural women had no significant relationship with their participation in homestead vegetable cultivation.

Farm Size and Participation in Homestead Vegetable Cultivation

The computed value of 'r' (0.347) was greater than the tabulated value (r=0.234) with 118 degrees of freedom at 0.01 level of probability as shown in Table 4.17 and the relationship showed a positive trend. Hence, the concerned null hypothesis was rejected. The findings indicated that farm size of the rural women had significant positive relationship with their participation in homestead vegetable cultivation.

Knowledge of Homestead Vegetable Cultivation and Participation in Homestead Vegetable Cultivation

The computed value of 'r' (0.171) was smaller than that of the tabulated value (r=0.179) with 118 degrees of freedom at 0.05 level of probability as shown in Table 4.17. Hence, the concerned null hypothesis was accepted and it was concluded that knowledge of homestead vegetable cultivation of the rural women had no significant relationship with their participation in homestead vegetable cultivation.

Cosmopoliteness and Participation in Homestead Vegetable Cultivation

The computed value of 'r' (0.144) was smaller than that of the tabulated value (r=0.179) with 118 degrees of freedom at 0.05 level of probability as shown in Table 4.17. Hence, the concerned null hypothesis was accepted and it was concluded that cosmopoliteness of the rural women had no significant relationship with their participation in homestead vegetable cultivation.

Extension Contact and Participation in Homestead Vegetable Cultivation

The computed value of 'r' (0.226) was greater than the tabulated value (r=0.179) with 118 degrees of freedom at 0.05 level of probability as shown in Table 4.17 with a positive trend. Hence, the concerned null hypothesis was rejected. The findings indicated that extension contact of the rural women had a significant positive relationship with their participation in homestead vegetable cultivation.

Agricultural Training and Participation in Homestead Vegetable Cultivation

The computed value of 'r' (0.246) was greater than the tabulated value (r=0.234) with 118 degrees of freedom at 0.01 level of probability as shown in Table 4.17 and the relationship showed a positive trend. Hence, the concerned null hypothesis was rejected. The findings indicated that agricultural training of the rural women had significant positive relationship with their participation in homestead vegetable cultivation.

Decision Making Role and Participation in Homestead Vegetable Cultivation

The computed value of 'r' (0.226) was greater than the tabulated value (r=0.179) with 118 degrees of freedom at 0.05 level of probability as shown in Table 4.17 with a positive trend. Hence, the concerned null hypothesis was rejected. The findings indicated that decision making role of the rural women had a significant positive relationship with their participation in homestead vegetable cultivation.

Innovativeness and Participation in Homestead Vegetable Cultivation

The computed value of 'r' (0.426) was greater than the tabulated value (r=0.234) with 118 degrees of freedom at 0.01 level of probability as shown in Table 4.17 and the relationship showed a positive trend. Hence, the concerned null hypothesis was rejected. The findings indicated that innovativeness of the rural women had significant positive relationship with their participation in homestead vegetable cultivation.

4.4 Problem Faced by the Rural Women to undertake the Homestead Vegetable Cultivation

The problem faced index (PFI) was calculated to find out major problems confronted by the rural women for participating homestead vegetable cultivation. It is obvious that the rural women face a number of problems or constrains in performing in homestead vegetable cultivation activities, the extent and types of problems are diversified as they are mostly controlled by nature. However, after discussion with the respondents ten major problems of homestead vegetable cultivation were selected to measure the extent of problem faced. In order to understanding the comparative importance, the problems have been arranged in rank order according their PFI as shown in Table 4.18.

Table 4.18 Problem Faced Index of Selected Problem of the Respondent in Homestead Vegetable Cultivation

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

CHAPTER 5

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Summary of the Findings

5.1.1 Selected Characteristics of the Rural Women

Age : The highest proportion (65.8 percent) of the respondents felt in the young aged category compared to 28.3 percent middle aged and 5.8 percent old aged category.

Education : The highest proportion (58.3 percent) of the women belonged to the secondary education category compared to 25.8 percent and 12.5 percent of the rural women belonged to primary level and above secondary level education respectively. Rest 3.3 percent were can sign only.

Family Size : The highest proportion (73.3 percent) of the women belonged to the medium families consisting of 5 to 7 members compared to 20.8 percent and 5.8 percent of the rural women belonged to small family and large family respectively.

Family Income : The highest proportion of the respondent (61.7 percent) had medium income while 32.5 percent had low income and only 5.8 percent had high income. In fact the overwhelming majority of the respondent 94.2 percent women are of the study area constituted medium to low income categories.

Farm Size : The highest proportion of the women belongs to medium farm size category (77.5 percent) compared to 15.8 percent of them having large farm size, 5 percent of them having small farm size and only 1.7 percent had marginal farm size.

Knowledge of Homestead Vegetables Cultivation : The highest majority (64.2) percent of the women had medium knowledge regarding agricultural cultivation compared to 20 percent had high agricultural knowledge and 15.8 percent of the women had low vegetable cultivation knowledge.

Cosmopoliteness : The highest proportion of the respondent (86.7 percent) had medium cosmopoliteness compared to 9.2 percent had low cosmopoliteness and 4.2 percent had high cosmopoliteness.

Extension Contact : The highest proportion (82.5 percent) of the respondent of the study area had medium extension contact compared to 14.2 percent of the respondents had low extension contact. Only 3.3 percent of the respondent women of the study area had high extension contact.

Agricultural Training : The highest proportion (64.2 percent) of the respondents was having low agricultural training exposure compared to 20 percent of them having no agricultural training. Only 15.8 percent had medium agricultural training.

Decision Making Role : The highest (65.9 percent) of the respondents was having medium decision making role compared to 27.5 percent of them having high decision making role and 6.6 percent having low decision making role.

Innovativeness : The highest proportion (64.2 percent) of the women had medium innovativeness compared to 28.3 percent had low innovativeness and 7.5 percent high innovativeness.

5.1.2 Participation of Rural Women in Homestead Vegetable Cultivation

5.1.2.1 Participation in Homestead Winter Vegetable Cultivation

The highest percentage (62.5%) of the rural women had medium participation in winter vegetable cultivation compared to 30 percent of low participation and only 7.5 percent high participation.

5.1.2.2 Participation in Homestead Summer Vegetable Cultivation

The highest percentage (73.3%) of the rural women had medium participation in summer vegetable cultivation compared to 22.5 percent of low participation and only 4.2 percent high participation.

5.1.2.3 Participation in Homestead Vegetable Cultivation

The highest percentage (52.5%) of the rural women had medium participation in overall vegetable cultivation compared to 36.7 percent of low participation and only 10.8 percent high participation.

5.1.3 Relationship between the Selected Characteristics of Rural Women and their Participation in Homestead Vegetable Cultivation

Correlation analysis indicated that five out of eleven selected characteristics of the rural women namely farm size, extension contact, agricultural training, decision making role and innovativeness had significant positive relationship with their homestead vegetable cultivation. Other variables namely age, level of education, family size, family income, knowledge of homestead vegetable cultivation and cosmopoliteness had no significant relationship with their homestead vegetable cultivation.

5.1.4 Problem Faced by the Rural Women to undertake the Homestead Vegetable Cultivation

Among the ten selected problem 'lack of credit' was ranked first followed by 'lack of technical knowledge', 'insect and disease infestation', 'higher price of inputs', 'lack of quality seeds and seedlings', 'cattle and goat destroy the vegetables' 'lack of homestead land', 'lower fertility of homestead land' and 'lower market price of products' while 'lack of required information in time' had the last position in order of ranking.

5.2 Conclusion

A conclusion may be looked upon as an inference based on the findings of empirical study, pertinent facts and unbiased judgments. On the basis of the findings of the study the logical interpretation of their meanings and other relevant facts are promoted the researcher to draw the following conclusion:

1. The findings indicated that a large proportion of (94.1 percent) the rural women were young to middle aged. Age of the rural women had no significant relationship with their participation in homestead vegetable cultivation. It may, therefore, be concluded that proper emphasis should be given on the rural women of all age categories by the extension workers in order to encourage participation in homestead vegetable cultivation.
2. The findings indicated that a large proportion of (84.1 percent) the rural women were primary level to secondary level. Education of the rural women had no significant relationship with their participation in homestead vegetable cultivation. According to this result we can draw a conclusion that high literacy rate as well as higher educational level among the rural women of the study area does not have much influence in their participation in homestead vegetable cultivation. Though education of the rural women does not have direct effect on their participation in different homestead vegetable cultivation, but it can indirectly help the rural women to become aware of the benefits of

homestead vegetable cultivation. So, necessary steps should be taken to improve the educational level of the rural women of the study area.

3. The findings indicated that a large proportion of (94.1 percent) the rural women were medium family to small family. Family size of the rural women had no significant relationship with their participation in homestead vegetable cultivation. Therefore, it may be concluded that the rural women who had large family involved more in homestead vegetable cultivation rather than small family.
4. The overwhelming majority of the respondent 94.2 percent women are of the study area constituted medium to low income categories. Family income of the rural women had no significant relationship with their participation in homestead vegetable cultivation.
5. The findings indicated that a large proportion of (93.3 percent) the rural women were medium to large farm size. Farm size of the rural women had significant positive relationship with their participation in homestead vegetable cultivation. Therefore, it may be concluded that the rural women had large farm size involved more in homestead vegetable cultivation.
6. The findings indicated that majority (84.2 percent) of the rural women had medium to high knowledge of homestead vegetable cultivation. Knowledge of homestead vegetable cultivation of the rural women had no significant relationship with their participation in homestead vegetable cultivation.
7. The overwhelming majority of the respondent 95.9 percent women are of the study area constituted medium to low cosmopoliteness. Cosmopoliteness of the rural women had no significant relationship with their participation in homestead vegetable cultivation. The findings of the study therefore, lead to the conclusion that for successful participation in homestead vegetable cultivation, the rural women of the study area need to be more cosmopolite for their better awareness of recent technologies related to homestead vegetable cultivation. For this,

field-days, tours, fairs etc. should be arranged to increase the cosmopoliteness among the rural women.

8. The findings of the study indicated that overwhelming majority (96.7) percent of the respondents had medium and low extension contact for getting necessary agricultural information. **E**xtension contact of the rural women had a significant positive relationship with their participation in homestead vegetable cultivation. Hence, it may be concluded that extension contacts increase the outlook of the rural women which lead them to adopt new technologies related to homestead vegetable cultivation.
9. Data indicated that the highest proportion (64.2 percent) of the respondents was having low agricultural training. Agricultural training of the rural women had significant positive relationship with their participation in homestead vegetable cultivation. The rural women having high training gained more knowledge on homestead vegetable cultivation and as a result, they adopt new technologies related to homestead vegetable cultivation very swiftly. Considering the above facts, it may be concluded that the participation of the rural women in homestead vegetable cultivation can be increased if more agricultural training is conducted for the rural women of the study area.
10. Data also revealed that majority (93.4 percent) of the respondents had medium to high decision making role. Decision making role of the rural women had a significant positive relationship with their participation in homestead vegetable cultivation.
11. The overwhelming majority (92.5) percent of the respondent women had medium to low innovativeness. Innovativeness of the rural women had significant positive relationship with their participation in homestead vegetable cultivation. It may be concluded that the innovativeness of the rural women in homestead vegetable cultivation can be increased if new technology is taken for the rural women of the study area.

12. The findings of the study revealed that vast majority of rural women (89.2 percent) had low to medium participation in homestead overall vegetable cultivation. Participation of the rural women had significant positive relationship with their farm size, extension contact, agricultural training, decision making role and innovativeness. Therefore, it may be concluded that it would be a wiseful thinking to increase the overall situation of participation by taking care of the factors related to increase of participation among the rural women.

5.3 Recommendations

Based on the findings of the present study, the following recommendations were made:

5.3.1 Recommendations for Policy Implications

Recommendations based on the findings and conclusions of the study are presented below:

i. Homestead vegetable cultivation is an important source of nutrients that make diets for human beings more balanced and also a good earning source for the family. But in the present study, majority of the rural women had low to medium participation in homestead vegetable cultivation. It is, therefore, recommended that necessary steps should be taken to motivate the rural women in participating homestead vegetable cultivation.

ii. Farm size of the rural women had significant positive relationship with their participation in homestead vegetable cultivation. Therefore, it may be recommended that GOs and NGOs should take necessary motivational program specially to small and medium farm sized rural women so that they can cultivate more vegetables in their homestead.

iii. Extension contact of rural women had significant positive relationship with their participation in homestead vegetable cultivation. Therefore, it may be recommended that, DAE and other agriculture related

organizations should take necessary steps to enhance their extension contact with the rural women. Due to social system and religion, rural women are reluctant to come in contact with male extension worker. So, more women extension worker should be employed to make personal contact along with other enhance group and mass media.

iv. Agricultural training had significant positive relationship with their participation in homestead vegetable cultivation. Therefore, it may be recommended that, DAE and other agriculture related organizations should organize necessary training and skill development program like training on vegetable cultivation, fertilizer application etc. so that the rural women could increase vegetable cultivation in their homestead as well as can increase their family income.

v. 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.

5.3.2 Recommendations for Further Study

Short term and sporadic study being conducted in some specific location cannot provide all information for the proper understanding of the rural women towards the participation in homestead vegetable cultivation. Therefore, the following recommendations were made for further study:

I. The present study was conducted in five selected villages of Brahmanbaria district. It is strongly felt that study of this nature be replicated in other parts of Bangladesh.

II. This study investigated the relationship of eleven personal and socio-economic characteristics of the rural women with their participation of homestead vegetable cultivation. Therefore, it is recommended that further study should be conducted involving other characteristics in this regard to better interpret the unexplained variations.

III. Participation of rural women in homestead vegetable cultivation may be determined by using other ways and methods which may be used in conducting further research.

IV. The study was conducted on female farmers but male farmers are equally important. So, a similar study may be conducted with male farmers.

BIBLIOGRAPHY

Abdullah, T. 1986. Homestead Agricultural Production in Bangladesh. *ADAB* News, 13(5):1-7.

Agriculture Information Service [AIS] (2004). *Dissemination of information on successful NAP activities for advancement of women,* Dhaka: AIS. Retrieved April 11, 2011

Ahmed, A. R., M. A. A. Bhuiya, Z. A. Reza, M. Z. Hossain. (2004). Methods of Statistics. S. Ahmed & Associates, Manikganj-1800.

Ahmed, H. 1977. Use of Information Sources by the Farmers in the Adoption of Improved Farm Practices in Jute Cultivation. *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Ahsan, R.M. 1986. Study of women in Agriculture. Paper presented at the Workshop on Women in Agriculture, Comilla. Bangladesh Academy for rural Development, 24-25 March.

Ajayi, S. 1995. Gender Roles in Subsistence Crop Production in Kwara State, Nigeria. Department of Agricultural Extension and Rural Development, University of Ilorin, Nigeria.

Akanda, M.D. 2000. Participation of Rural Women in Different Farm and Non-Farm Activities in Selected Villages of Mymenshing District. *M. S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Akanda, W. 1994. Particiaption of rural women in different farm and non-farm activities in two selected villages of Mymensingh district. *M. S. (Ag. Ext. Ed.) Thesis,* Department of Agricultural Extension Education., Bangladesh Agricultural University, Mymensingh.

Akhter, A. 1989. Involvement of Women in Homestead Agriculture in Selected Village of Tangail District. *M. S. (Ag. Ext. Ed.) Thesis,* Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Akhter, M. S. 2000. Participation of Women Clientele in Development Activities of the RDRS Project. *M. S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension, Bangladesh Agricultural University, Mymensingh.

Aktaruzzaman, M. 2006. Functional Participation of Landless Women in Income Generating Activities (IGAs) under SAIP of DAE *M. S.* (*Ag. Ext. Ed.) Thesis*, Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh,

Akter, T. 2003. Participation of Women in Income Generating Activities (IGA) of SUS. *M. S. (Ag. Ext. Ed.) Thesis,* Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Alam, M. S. 2001. Agricultural Knowledge of Women Receiving Training from Begum Rockeya Training Center Compared to Other Women. *M. S. (Ag. Ext. Ed.) Thesis,* Department of Agricultural Extension Education, BAU, Mymensingh.

Ali, O. 1995. Attitude of Rural women of Bangladesh Agricultural University Extension Centre (BAUEC) towards Working in Group. *M. S. (Ag. Ext. Ed.) Thesis,* Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Ali, Z. A. 2012. Participation of Common Interest Group (CIG) Members in Community Development. *M. S. (Ag. Ext. Ed.) Thesis*, Dept. of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka.

Aziz, A. 2004. Participation in Homestead Agriculture by the Tribal Women in Dinajpur District. *M. S. (Ag. Ext. Ed.) Thesis,* Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

BBS. 2011. Statistical Year Book of Bangladesh. Bangladesh Bureau of Statistics. Statistics Division, Ministry of Planning, Government of the People's Republic of Bangladesh.

Chowdhury, N. 2009. Participation of Rural Women in Farm and Non-Farm Activities: An Economic Analysis. *M. Sc. Econ. Thesis,* Dept. of Agricultural Economics, Bangladesh Agricultural University, Mymensingh.

Chowdury, A. R. 2000. Women's Opinion for Participation in Development Activities in A Selected BAUEC Village. *M. S.* (*Ag. Ext. Ed.)Thesis,* Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

DAE. 1999. Agricultural Extension manual. Ministry of Agriculture, Government of the people's Republic of Bangladesh. Khamarbari, Dhaka.

Devi, L. 1983. Role expectation and role performance of rural women in farming activities. *Indian Journal of Extension Education.* 20 (3 & 4): 27-34.

Dey, J. 1985. *Women in Rice Farming Network: Country Profile in Bangladesh.* A paper Presented at the project design workshop on women in rice farming systems. International Rice Research Institute, Manila, Philippine.

Dixon, S. 1988. Role of women in Malaysia agriculture assessment and prospect for the future. Paper presented on the Economic advanced of rural women in Asia and Pacific. Kaula Lumpur.

FAO. 2003. Data taken from FAO Website. http: 1/1/www.FAO.org.

Ferdous, H. 2007 Adoption of Homestead Farming Technologies by the Rural Women of Savar Upazilla. *M.S. (Ag. Ext. Ed.) Thesis,* Dept. of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka.

FSRDP. 1990. *Farming System Research and Development Project Program Report.* Bangladesh Agricultural University, Mymensingh.

Goode, W. J. and P. K. Hatt. 1952. Method of Social Research. New York: McGraw Hill Book Company, Ins.

Halim, A. 1987. Intensive Homestead Production Plant in Bangladesh. *An unpublished Report of World Bank Consultancy*. The World Bank Resident Mission in Dhaka, Bangladesh.

Halim, A. B. S. Nahar and A. B. M. M Alam. 1994. "Research on Women in Agriculture: The Experience of BAU Farming System and Environment Studies." Paper Presented in the Workshop on Women in Agriculture: The Challenges, BRAC 23-24, March, Dhaka, Bangladesh.

Halim. A. 1991 Study on Sectorial Contribution at Income Generation from Homestead Area. An Evaluation Report on BAU-FSRDP Activities. Farming System Research And Development Programmed, Bangladesh Agricultural University, Mymensingh.

Hasan, K. 2006. Participation in Farming Activities by Conventional and Organic Farmers. *M. S.* (*Ag. Ext. Ed.) Thesis*, Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh,

Hossain, A. 2011. Problem Confronted by Upazilla Level Extension Personnel in Receiving and Disseminating Technological Information. *M. S. (Ag. Ext. Ed.) Thesis*, Dept. of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka.

Hossain, M. A. 1985. *Munoz in Rice Culture: A Case Study in Bangladesh Village.* Paper Presented at the 16th working group meeting of Asia Rice Farming System Network, Bangladesh, 9-13 November.

Hossain, M. A. 2010. Involvement of Farmers in Homestead Fruit Production Activities. *M. S. (Ag. Ext. Ed.) Thesis*, Dept. of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka.

Hossain, M. D. 1981. Relationship's of Farmers' Characteristics with their Adoption of HYV Rice as Transplanted Aman and other related aspects in Bhabakhali Union of Mymenshingh District. *M. S.* (*Ag. Ext. Ed.) Thesis*, Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Huq, J. 1981. Employment Generation in Cattage Industries and Rural Women: Role and Strategy. *The Bangladesh Journal of Political Economy*.

Iqbal, M. 1963. Farmers attitudes towards modern agricultural practices. *M. S. (Ag. Ext. Ed.) Thesis*, Panjab University, Lahore.

Islam, M. M. 1996. Farmers' Use of Indigenous Technical Knowledge in the Context of Sustainable Agriculture Development. *M. S. (Ag. Ext. Ed.) Thesis*, Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh,

Islam, M. R. 2002. Involvement of BRAC Trained Women Beneficiaries in Income Generating Activities and Decision Making Role. *M. S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Myensingh.

Islam, M. Z. 2003. Participation of Rural Women in Goat Rearing in Selected Area Under Manikgonj District. *M. S. (Ag. Ext. Ed.) Thesis*, Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh,

Karim, A. S. M. Z. 1973. Adoption of fertilizers by the transplanted aman rice growers in Kewatkhali Union of Mymensingh district. *M. S. (Ag. Ext. Ed.) Thesis,* Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh,

Karim, M. R. 2008 Indigenous Technologies Used by the Rural Women in Agricultural Farming. *M. S. (Ag. Ext. Ed.) Thesis,* Dept. of Agricultural Extension and Information System, Bangladesh Agricultural Sher-e-Bangla Agricultural University, Dhaka.

Karim, M.M, 1993. Assessment of farmers' agricultural knowledge in sugarcane cultivation. Department of Extension Education., IPSA, Salna, Gazipur.

Kashem, M. A. and A. Halim. 1991. Use of communication media in the transfer of technologies to santal women : A farm level study. Research Monograph No. 2. Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Kaur, M.R. 1988. An evaluative study of women development programme under Indogerman Dhaludhar project, Daulampur district, Kumgra. *Thesis Abstract*, Haryana Agril. Univ., Hissar, Vol XVI(4).

Khatun, F. 2004. Participation of Rural Women in Homestead Management Activities. *M. S. (Ag. Ext. Ed.) Thesis,* Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh,

Latif, M. A. 1974. How rural women receive agricultural information. *M. S. (Ag. Ext. Ed.) Thesis,* Department of Agricultural Extension and Teachers Training, Bangladesh Agricultural University, Mymensingh.

Nahar, N. 1996. Relationship of selected characteristics of the women with usefulness of agricultural radio programme and homestead farming knowledge. *M. S. (Ag. Ext. Ed.) Thesis,* Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Nahar, N. 2008. Relationship of Selected Characteristics of the Farm Women with Usefulness of Agricultural Radio Program and Homestead Farming Knowledge *M. S. (Ag. Ext. Ed.) Thesis*, Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh,

Nahar, K. 2000. Participation of rural women in homestead agriculture in a selected area of Gazipur district, *M.S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Nair, S. P Peru. 1963. Social factors in the acceptance of improved practices. AICC Economic Review, New Delhi.

Parveen, S. 1993. Attitude of the rural women towards homestead agricultural production. *M. S. (Ag. Ext. Ed.) Thesis,* Department of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Preliminary Results of Bangladesh Population and Housing Census, July 2011 Data taken from Website. http://bangladeshcensus.blogspot.com

Rahman, H. M. S. 2007. Participation of Rural Women in Homestead Agricultural Activities. *M. S. (Ag. Ext. Ed.) Thesis,* Dept. of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka.

Rahman, M. H. 2006. Constrains Faced by the Banana Growers of Sonargaon Upazilla Under Narayanganj District. *M. S. (Ag. Ext. Ed.) Thesis*, Dept. of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka.

Rao, D. R. 1994. A Qualitative Exploration of some Socio-Economic Issue in South Uddamdi. Matlab, RDP Annual Report: Dhaka, Bangladesh Rural Advancement Committee.

Rogers, E. M. 1995. Diffusion of Innovations. 4th ed. New York: The Free Press.

Rosenberg, M. and C. I. Hovland 1960. Research on Communication and Attitude Quoted Trian dis, H. C. 1971. Attitude and Attitude change New York: John Wiley Publisher.

Salauddin, M. 2003. "Involvement of Rural Women in Homestead vegetable cultivation in a selectad Area of Ghoraghat Upazila Under Dinajpur District. *M. S. (Ag. Ext. Ed.) Thesis*, Department of Agricultural Extention Education, BAU, Mymensingh.

Sattar, E. 1979. Demograpkhic feature of Bangladesh with a reference of the women and children in situation of women in Bangladesh. Women for Women, Dhaka.

Saugwan, V.S., S. Manjal and R.K. Punia. 1990. Participation of women in farm activities. *Indian J. Extn. Edu.* Vol. XXVI (1&2). PP 112-114.

Sharmin, H. 2005. Rural Women's Perception of Benefits of Involvement in Income Generating Activities under a Non-Government Organization. *M. S. (Ag. Ext. Ed.) Thesis*, Dept. of Agricultural Extension Education, Bangladesh Agricultural University, Mymensingh.

Sirohi, S. 1985. Involvement of rural women in farming. *Indian Journal of Extension Education*. Vol. XXI (3&4). PP110-111.

Tazkira, U. F. B. 2009 Involvement of the Rural Women in Homestead Farming. *M. S. (Ag. Ext. Ed.) Thesis*, Dept. of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka.

Townsend, J. C. (1953). *Introduction to Experimental Methods*. International Student Edition, New York. McGraw Hill Book Company Inc.

Uddin, M. M. 2008. Involvement of Rural Women in Home Gardening Practices in SDS Area of Shariatpur District. *M. S. (Ag. Ext. Ed.) Thesis*, Dept. of Agricultural Extension and Information System, Sher-e-Bangla Agricultural University, Dhaka.

Verma, T., V. Jain and S. Devi, 1988. A Study on Gain in Knowledge and Change in Attitude through Training on Improved Home Making Tasks. *Indian Journal of Extension Education. Vol. XXV (1&2): 75.*

Vlassak, K. 1993. Women in Agricultural production. Bulletin-des-Seances, Academie-Royale-des-Sciences' Outre-Mer. 1993, 39: sup, pp. 51-61.

APPENDICES

Appendix - A

AN ENGLISH VERSION OF THE INTERVIEW SCHEDULE

Department of Agricultural Extension & Information System

Sher-e-Bangla Agricultural University, Dhaka- 1207

An Interview Schedule for a research study entitled

"PARTICIPATION OF RURAL WOMEN IN HOMESTEAD VEGETABLE CULTIVATION OF NABINAGAR UPAZILA UNDER BRAHMANBARIA DISTRICT"

(Please answer the following questions and put-check mark whenever application)

Name: ..... Sample No : .....

Father's Name/Husband's Name: .....

Village: ..... Union: ..... Dist: .....

1. Age

How old are you? ..... Years.

2. Level of Education

Please mention your education status

a) Can't read and write ( )

b) Can sign only ( )

c) Attended Class up to ( )

3. Family Size

How many members are there in your family? …… no. members

4. Family Income

How much money you received from the following sources last year

A. Income from agricultural sources

Sl. No.	Income sources	Production(kg)	Value per unit(Tk)	Total value(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)			
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

5. Farm Size

Please mention the area of your land according to use

Sl. No.	Type of land	Land Area	
		Local Unit	Hectare
A.	Homestead land		
B.	Own land under own cultivation		
C.	Land given to others on borga		
D.	Land taken from others on borga		
E.	Land taken from others on lease		
Total=A + B + 1/2(C + D) + E			

6. Knowledge of Homestead Vegetables Cultivation

Please answer the following questions:

Sl. No.	Questions	Assigned score (2)	Obtained marks
1	Which place is best for homestead vegetable production?		
2	How do you prepare land to cultivate homestead vegetables cultivation?		
3	Mention the name of 4 summer vegetables.		
4	Mention the name of 4 winter vegetables.		
5	Name 2 year round vegetables.		
6	Mention the name of two leafy vegetables.		
7	Mention two vegetables which need support to grow up.		
8	What precautions should need to follow at the time of pesticide application?		
9	Mention the two qualities of good seeds.		
10	Mention the name of two diseases of vegetables		
11	Name four common fertilizers available at your local market.		
12	Mention the name of two vitamin-A containing vegetables		
13	What is the optimum time for planting tomato and brinjal?		
14	Mention the name of early variety of potato		
15	Mention the name of two insecticides for controlling insect pest of vegetables		
Total Score			

7. Cosmopoliteness

Please mention your frequency of visit to the following places

Sl. No.	Place of visit	Frequency of visit			
		Regularly (score-3)	Occasionally (score-2)	Rarely (score-1)	Not at all (score-0)
1	Visit to other villages	≥4 times \month	2-3 times/ month	1 time/ month	0 time/ month
2	Visit to other union	≥5 times or above/month	3-4 times/ month	1-2 times/ month	0 time/ month
3	Own Upazila Sadar	≥4times/ month	2-3 times/ month	1 time/ month	0 time/ month
4	Other Upazila Sadar	≥3 times/ year	2 times/ year	1 time/ year	0 time/ year
5	Own district town	≥ 4 times/ year	2-3 times/ year	1 time/ year	0 time/ year
6	Other district town	≥3 times/ year	2 times/ year	1 time/ year	0 time/ year
7	Capital city (Dhaka)	≥3 times/ year	2 times/ year	1 time/ year	0 time/ year

8. Extension contact

Please indicate your extent of contact with the following agricultural or information media

Sl. No.	Communication Media	Extent of Communication Media			
		Regularly	**Occasionally**	**Rarely**	**Not at all**
Personal Media Contact					
1)	Sub Assistant Agriculture Officer(SAAO)	≥4 times/ month	2-3 times/ month	1 time/ month	0
2)	Agriculture Extension Officer (AEO)	≥3 times/ year	2 times/ year	1 time/ year	0
3)	Upazila Agriculture Officer (UAO)	≥3times/ year	2 times/ year	1 time/ year	0
4)	Local leader	≥5times/ months	3-4 times/ months	1-2 times/ months	0
5)	Seed/fertilizer dealer	≥5 times/ month	3-4 times/ month	1-2 times/ month	0
Group Media Contact					
6)	Group discussion	≥5 times/ year	3-4 times / year	1-2 times / year	0
7)	Field day	≥3 times/ year	2 times / year	1 time / year	0
8)	Result demonstration	1 time/year	1 time/ 2 years	1 time/ ≥3 years	0
9)	Participation in agricultural training course	≥4 times/ life	2-3 times/ life	1 time / life	0
Mass Media Contact					
10)	Daily paper	≥5 times/ month	3-4 times/ month	1-2 times/ month	0
11)	Radio	≥5 times/ week	3-4 times/ week	1-2 times/ week	0
12)	Television	≥5 times/ months	3-4 times/ months	1-2 times/ month	0
13)	Poster	≥5 times/ year	3-4 times/ year	1-2 times/ year	0
14)	Leaflet	≥5 times/ year	3-4 times/ year	1-2 times/ year	0
15)	Agricultural fair	1 time/ year	1 time/ 2 years	1 time / ≥3 years	0
Total =					

9. Agricultural Training

Did you participate in any agricultural training program?

YES ☐ No ☐

If yes, then please give the following information:

Sl. No.	Name of the training courses	Duration of training(days)
Total =		

10. Decision Making Role

What is your role of decision making in your family?

Nature of Decision	Extent of involvement in decision making			
	Take decision solely (score-3)	Take decision discussing with husband (score-2)	Take decision discussing with family members (score-1)	No decision making role (score-0)
Adoption of agricultural technologies				
Buying of agricultural inputs				
Family affairs				
Selling of agricultural products				
Education of children				
Participation in social activities				

11. Innovativeness

Please furnish your information about the extent of uses of the following technologies

Sl. No	Practices/method	Degree of use					
		Adoption within 1 year of hearing	Adoption within > 1-2 years of hearing	Adoption within > 2-3 years of hearing	Adoption within > 3-4 years of hearing	Adoption after 4 years of hearing	Do not use
1	Cultivation of HYV (High Yielding Variety) seed						
2	Use of compost						
3	Use of granular fertilizer						
4	Cultivation of vegetables in homestead area						
5	Use of IPM (Integrated Pest Management)						
Total=							

12. Participation of Rural Women in Homestead Vegetables Cultivation

a) Participation of rural women in homestead winter vegetables cultivation

i) Please indicate your extent of participation in the following operations of winter vegetables cultivation

Sl. No.	Item/ Operation	Extent of participation			
		Regularly (score-3)	Occasionally (score-2)	Rarely (score-1)	Never (score-0)
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				

ii) Please indicate your extent of production participation in the following winter vegetables cultivation

Sl. No.	Name of the vegetables	Extent of production			
		1 year	2 year	3-5 year	>5 year
1.	Brinjal				
2.	Bengal spinach				
3.	Battle gourd				
4.	Cabbage				
5.	Carrot				
6.	Cauliflower				
7.	Country been				
8.	Potato				
9.	Radish				
10.	Tomato				

b) Participation of rural women in homestead summer vegetables cultivation

i) Please indicate your extent of participation in the following operations of summer vegetables cultivation

Sl. No.	Item/ Operation	Extent of participation			
		Regularly (score-3)	Occasionally (score-2)	Rarely (score-1)	Never (score-0)
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				

ii) Please indicate your extent of production participation in the following summer vegetables cultivation

Sl. No.	Name of the vegetables	Extent of production			
		1 year	2 year	3-5 year	>5 year
1.	Amaranths				
2.	Bitter gourd				
3.	Indian spinach				
4.	Okra				
5.	Pointed gourd				
6.	Ridge gourd				
7.	Snake gourd				
8.	Sweet gourd				
9.	Teasle gourd				
10.	Wax gourd				

13. Problem Faced in Homestead Vegetables Cultivation

Please indicate the extent of problem that you usually face during the homestead vegetable cultivation

Sl. No.	Items/Operation	Extent of problem				
		Very high (score-4)	High (score-3)	Medium (score-2)	Low (score-1)	No problem at all (score-0)
1.	Lack of quality seeds and seedlings					
2.	Lack of required information in time					
3.	Higher price of inputs					
4.	Lower market price of products					
5.	Lower fertility of homestead land					
6.	Lack of technical knowledge					
7.	Lack of credit					
8.	Lack of homestead land					
9.	Insect and disease infestation					
10.	Cattle and goat destroy the vegetables					
Total score=						

Thank you for your kind co-operation

Date: .....

.....

Signature of Interviewer

APPENDIX B

Correlation Matrix of the dependent and independent variables (N = 120)

Variable	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	Y_1	Y_2	Y_3
X_1	1													
X_2	-.583**	1												
X_3	-.017	-.042	1											
X_4	.244**	-.028	.190*	1										
X_5	.238**	.055	.122	.649**	1									
X_6	.050	.161	.001	.242**	.317**	1								
X_7	-.017	.061	-.092	.208*	.275**	.204*	1							
X_8	.154	.124	.014	.428**	.486**	.445**	.239**	1						
X_9	.073	.126	.000	.319**	.366**	.103	.040	.491**	1					
X_{10}	.214*	.012	.091	-.064	-.138	.035	-.291**	-.061	-.126					
X_{11}	-.225*	.237**	-.089	-.083	.024	.055	.107	.058	.032	1				
X_{12}	-.158	.207*	-.090	.100	.226*	.208*	.125	.372**	.258**	.418**	1			
Y_1	.040	.117	-.043	.196*	.365**	.131	.130	.250**	.334**	.130	.364**	1		
Y_2	-.035	.119	-.086	.041	.272**	.187*	.135	.164	.114	.293**	.423**	.701**	1	
Y_3	.004	.128	-.069	.132	.347**	.171	.144	.226*	.246**	.226*	.426**	.927**	.917**	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

LEGEND

X_1 = Age
X_2 = Education
X_3 = Family size
X_4 = Family income
X_5 = Farm size
X_6 =Knowledge of homestead vegetable cultivation
X_7 = Cosmopoliteness
X_8 = Extension contact
X_9 = Agricultural training
X_{10} = Decision making role
X_{11} = Innovativeness
Y_1 = Participation in winter vegetable cultivation
Y_2 = Participation in summer vegetable cultivation
Y_3 = Participation in homestead vegetable cultivation