WOMEN'S REQUIREMENTS FOR CAPACITY BUILDING IN POST HARVEST ACTIVITES OF VEGETABLES

BY

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CERTIFICATE

This is to certify that thesis entitled, **"WOMEN'S REQUIREMENTS FOR CAPACITY BUILDING IN POST HARVEST ACTIVITES OF VEGETABLES"** 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 Md. Mohammad Abu Bakar Siddique Khan, Registration No. 00847 under my supervision and guidance. No part of the thesis has been submitted for any other degree or diploma.

I further certify that such help or source of information, as has been availed of during the course of this investigation has been duly acknowledged.

Dated:
Place: Dhaka, Bangladesh

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Supervisor

Dedicated

To

My Family

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The Author

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ABSTRACT

The specific objective of the study was to determine the women's requirements for capacity building in post harvest activities of vegetables. Attempts were also made to determine ten selected characteristics of the women and their relationship with requirements for capacity building in post harvest activities of vegetables and to find out the problems faced by the women in using improved post harvest technologies of vegetables. Data were collected from a sample of 100 women vegetables growers of the two villages of Roailbari union of Kendua upazila of Netrokona district. Pearson's correlation co-efficient was used to determine the relationships between the selected characteristics of the women with their requirements for capacity building. The highest proportion (63 percent) of the respondents had high extent of requirements while 34 percent of them had medium and only 3 percent of them had low extent of requirements for capacity building. Women's farm size, annual family income and use of post harvest technology showed significant negative relationship with their requirement's for capacity building in post harvest activities of vegetables but credit received and knowledge on vegetables production were positively significant. On the other hand, the rest of characteristics viz. age, education, dependency ratio of the family, decision making capacity and training received did not show any significant relationship with their requirements for capacity building in post harvest activities of vegetables. According to problem faced index (PFI), 'Lack of knowledge on post harvest activities of vegetables' was ranked first followed by 'Distance from sale centre' and 'Lack of marketing facility' while 'Low access to communication media' and 'Others' ranked last.

CHAPTER 1
INTRODUCTION

1.1 General Background

Women empowerment, enhancement capabilities as well as their status and exercise their rights in decision making are three important factors for participation of women in development activities. Participation of women in development was not started in a day rather it has long historical background. It started in Bengal as a movement against early marriage and injustice to women in the name of religious norms. At a later period, rights of women to have education and to participate in vote and elections, peasant movements, politics, economic activities and administration were added. Now-a-days in all over the world different organizations give emphasis on the issue of women development.

It is not easy for women to participate in development process. Usually they do not get same wages compared to men. Rather they have to face a lot of problems to entry to labor market in general and even if some access is available they do not have the opportunity to be able to influence decisions. They have not sufficiently been involved in the development activities that affect their lives (Murtaza, 2005). In our country, women have long been subjected to discrimination mostly due to gender bias in social traditions and practices. Women are neglected by some social norms and practices which is reflected in family laws. Due to the discrimination women are still leg behind from men in case of development.

Study of ILO (1995) revealed that in early nineties women comprised 70% of the world's poor and the number of rural women living below the poverty line rose faster than rural men in poverty. In Bangladesh 24% rural and 10% urban women are under extreme poverty line. Women should be the key targets to alleviate poverty. IFPRI (2000) reported that increasing women's human capital is one of the most effective ways to reduce poverty. Moreover, Millennium Development Goals (MDGs) put the first goal as eradicating extreme poverty and hunger (UNDP, 2004). Therefore, it is urgent to mainstream the women in the income generating activities to make them sell reliant.

Women may play a vital role in economic and social development both in national and global level. Participation in development issues is being needed for them for upgrading their livelihood status. Sociologists identified them as the poorer of the poor and in generally in rural areas they get the lesser share of food and healthcare as well as of inherited property. They are the most disadvantaged group in the social structure. Most of them are not much aware of their own abilities due to lack of education and restricted social mobility. Though some of them are qualified they often do not have the kind of access to credit or control over capital. Besides these, there are so many barriers which create problems for them. Traditional mobility constraints and social conventions discourage women to undertake income generating activities.

Although half of the population is women, on an average they do two-thirds of the total works including household works and received only one-tenth of world income. Majority of them are uneducated, unskilled, malnourished and economically and socially dependent on men. Participation of women in higher professional and managerial position is very limited and in garment industries they received lower wage then men though they have same level of education (UNDP, 1994).

For changing this situation of women and their development, government of Bangladesh and hundreds of non-government organizations have launched massive programs for women empowerment. They work at grass root level for poverty alleviation and employment generation. They have developed a number of sectoral program such as, agriculture, livestock, education, health and sanitation, nutrition, housing, saving, which are facilitated by its credit, training and technical support services and being implemented through overall alleviation programs. Beside these women can increase their capabilities and status through some homestead activities which may serve commercial purpose also.

On the other hand, vegetables have not only commercial value but also nutritional value in human diet. It is one of the most important income generating activities in alleviating poverty. The post harvest losses of vegetables in Bangladesh are estimated to be 26% (Khan, 1991). High perishability of vegetables, lack of storage facilities, mechanical injury due to improper handling, packaging, transportation and microbial infection are major causes of post harvest losses in vegetables. The post harvest losses include significant quantitative, qualitative and economic losses. If these losses could be minimized the growers as well as the intermediaries of the marketing channel could get a better economic return. These losses of vegetables can be minimized through improving capacity building of the women such as storage facilities and taking care while handling, packaging and transporting. Another way to tackle this problem is to process the vegetables for different purposes like pickle, jam, jelly etc. Processed vegetables have considerably increased market price than that of unprocessed vegetables and it brings about better economic return from the sector of vegetables when the post harvest operations are performed accordingly.

Since women are mostly involved in vegetables cultivation, they should be provided improve post harvest technological facilities for their self-reliance. Therefore, it has become imperative to assess women requirements for capacity building in post harvest activities of vegetables.

1.2 Statement of the Problem

More than 60 types of vegetables of indigenous and exotic origin are grown in Bangladesh. Based on the growing season, vegetables are categorized as summer/rainy season vegetables, winter season vegetables, and all-season vegetables. Of the summer vegetables, various cucurbits, vegetables cowpea, hyacinth bean, stem amaranth and Indian spinach is predominant. Winter vegetables include tomato, cabbage, Chinese cabbage, cauliflower, eggplant, carrot, spinach, bottle gourd, bush bean and radish. Crops like okra, heat-tolerant tomato, eggplant, carrot, spinach, many leafy vegetables and small onion are grown all year round. Summer vegetables are cultivated during the monsoon season from May to October. On the other hand, winter vegetables are grown from November to April.

The production of vegetables is higher during winter (60 to70%) and most districts produce marketable surplus during that season. As a result there is an acute shortage of vegetables during the summer, which leads lo chronic malnutrition among the people of Bangladesh. The average post harvest loss is estimated to be 26 percent (Khan, 1991). Singh and Chadha (1990) reported that a loss of nearly 25 to 40 percent of the vegetables occurs due to rough and improper post harvest handling, transportation and storage practices, and the variation often depends on the type of vegetables.

Women are the pioneer and chief producer of vegetables. Therefore, their capacity of handling post harvest operations needs to be improved. The requirements of women for capacity building in post harvest activities of vegetables is necessary to explore before lunching improvement programs on capacity building. Keeping these facts in mind the present resea[illegible] been undertaken as an inquiry to the following questions:

1. What are the requirements of women for building their capacity in post harvest activities of vegetables?
2. What are the characteristics of women that influence their requirements for capacity building?
3. To what extent the relationships prevail between their requirements for capacity building in post harvest activities of vegetables with their characteristics?
4. What are the problems faced by the women in using the post harvest facilities of vegetables?

1.3 Specific objectives of the study

The specific objectives of the study are as follows:

a) To determine and describe the characteristics of women that influence for capacity building in post harvest activities of vegetables;
b) To determine the women's requirements for capacity building in post harvest activities of vegetables;
c) To explore the relationships between selected characteristics of the women requirements for capacity building in post harvest activities of vegetables;
   The selected characteristics are as follows:
   i) Age
   ii) Education
   iii) Dependency ratio of the family
   iv) Farm size

v) Annual family income
vi) Decision making capacity
vii) Training received
viii) Credit received
ix) Knowledge on vegetables production
x) Use of post harvest technology

d) To find out the problems confronted by the women in using improved post harvest technologies of vegetables.

1.4 Justification of the Study

Estimates of the post-harvest losses of food grains in the developing world from mishandling, spoilage and pest infestation are put at 25 percent; this means that one-quarter of what is produced never reaches the consumer for whom it was grown, and the effort and money required to produce it are lost-forever. Fruit, vegetables and root crops are much less hardy and are mostly quickly perishable, and if care is not taken in their harvesting, handling and transport, they will soon decay and become unfit for human consumption. Estimates of production losses in developing countries are hard to judge, but some authorities put losses of sweet potatoes, plantain, tomatoes, bananas and citrus fruit sometimes high percent or half of what is grown. Reduction in this wastage, particularly if it can economically be avoided, would be of great significance to growers and consumers alike.

A little additional cost or modern marketing practices can improve the traditional methods of harvesting, handling, packaging and storing of vegetables. Not only expensive machinery and technology can improved this condition but also efficient and better utilization of the existing facilities is often sufficient. Inadequate knowledge about post harvest handling and storing of vegetables is responsible for this loss. Prolonging the shelf life and maintaining the quality of vegetables during storage are very important. Various loss reduction technologies have been devised to minimize the post harvest deterioration of vegetables. It is yet to explored that how much of these post harvest facilities are needed by the women. In addition, information on need for capacity building of women for practicing post harvest] activities of vegetables are very limited. The present research was, therefore, a modest attempt to discover the very facts and likewise the study has been entitled as "Women Requirements for Capacity Building in Post-harvest Activities of Vegetables".

1.5 Scope of the Study

The major findings of the present study may relevant to other areas of Bangladesh where the physical, socio-economic and cultural conditions are more or less similar to the study area. However, the findings of the study may helpful for the field workers of different development departments including Department of Agricultural Extension (DAE) under the Ministry of Agriculture and other Non-Government Organizations (NGOs) to improve strategies of extension to work effectively with the rural women. The outcomes of the study may also help settle down government strategic plan in incorporating the rural women in economic development of the country through poverty alleviation.

1.6 Limitations of the Study

Considering time, money and other necessary resources available to the researcher and to make the study meaningful and manageable from the point of view of research, some restrictions strictly followed in this study were as follows:

1. The study was confined to two villages of Royalbari union of Kendua upazila under Netrokona district.
2. There were many farm women in the study area, but only the rural women who involved in vegetables production were considered for this study.
3. There were many aspects of capacity building for using post harvest technologies of vegetables but only five aspects were selected for assessing the extent of requirements of women.
4. Characteristics of the women were many and varied but only 10 characteristics were selected for this study.
5. For information about the study, the researcher depended on data as given by the selected respondents during data collection.

1.7 Assumptions of the Study

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

1. The respondents were capable of furnishing proper responses to the questions contained in the interview schedule.
2. The responses furnished by the respondents were valid and reliable.

3. Information furnished by the respondents, included in the sample, were the representative of the whole population of the study area.
4. The researcher who personally collected data well adjusted himself to the social environment of the study area. Hence the data collected from the respondents were free from interviewer bias.
5. The findings of the study are expected to be useful for planning and execution of various programmes in connection with the improved post harvest activities of vegetables.
6. The extent of requirements for capacity building of women in post harvest activities of vegetables gave a representative feature in the context of the other areas of Bangladesh.

1.8 Statement of the Hypothesis

A hypothesis simply means a mere assumption or some supposition to be proved or disproved. But for a researcher, hypothesis is a formal question that he intends to resolve. According to Kerlinger (1973) "A hypothesis is a conjectural statement of the relation between two or more variables. Hypothesis are always in declarative sentence form and they related either generally or specifically variables to variables." As defined by Goode and Hatt (1952) "A hypothesis is a proposition which can be put to test to determine its validity. It may be contrary to or in accord with the common sense. It deals to an empirical test." In broad sense, hypothesis may be divided into two categories, (a) research hypothesis (Hi) and (b) null hypothesis (Ho). However, for the present study the hypotheses were formulated in null form.

The following null hypothesis was formulated to explore the relationship between some selected characteristics of the women and their requirements for capacity building in post harvest activities of vegetables.

"There is no relationship between the selected characteristics of the women and their requirements for capacity building in post harvest activities of vegetables."

1.9 Definition of Important Terms

For clarity of understanding, certain terms frequently used throughout the study are defined and interpreted as below:

Annual family income: Income was defined as the total financial return per year of a family from farm (crops, livestock, poultry and fish) and non-farm sources (service, business, selling labor, bank interests, remittance, financial help from relatives, etc.).

Capacity building: Capacity building of the women for practicing post harvest activities of vegetables was defined as the extent to which they have the accessibility to financial, physical, managerial support services as well as the ability to make decision about utilizing the post harvest facilities of vegetables.

Credit received: Credit received of a respondent woman was measured in terms of the amount of money received by her as loan from different sources.

Decision making capacity: Decision making capacity in the family was measured on the basis of the respondent's ability to make decision in the family regarding some selected social activities.

Dependency ratio of the family: Dependency ratio of the family is the proportion of dependent family members to the earning family members. It was computed with the following formula:

$$\text{Dependency ratio} = \frac{\text{Total number of family members} - \text{Total number of earning members}}{\text{Total number of earning members}}$$

Farm size: Farm size of a respondent referred to the total area of land on which her family carried out farming operation, the area being in terms of full benefit to the family.

Knowledge on vegetables production: It was the extent of basic understanding of the respondent in different aspects of vegetables production.

Management skill: It expressed the knowledge on post harvest activities, operational ability, market facility exploitation and financial management.

Requirement assessment: It was defined as the measurement of prerequisites required by the rural women towards post facilities of vegetables.

Physical facilities: Processing materials or equipments, processing ground, transporting vehicles, store house and sales centers were collectively termed as physical facilities.

Post harvest facilities of vegetables: These included the access to and availability of processing equipments and ground, cold storage, marketing channel, credit, transport, labor market etc.

Problem confrontation: It referred to the ten selected problems faced by the female in utilizing the post harvest facilities of vegetables.

Support services: Support services referred to facilities like preservation or cold storage, labor market, marketing channel, credit, transport, development workers etc.

Technology: Technology is a design for instrumental action that reduces the uncertainty in the cause-effect relationships involved in achieving desired outcome and is usually generated by research institutes, intelligent farmers and other to meet the farming needs.

Training received: Training received was defined by total number of days a respondent attended in different training programs in her life from different organizations.

Use of post harvest technology: It was defined as the nature of use (not at all, rarely, occasionally and regularly) of post harvest technologies of farm produces.

Women: Women respondents were defined as the housewives living in the study area.

CHAPTER 2
REVIEW OF LITERATURE

The present study was mainly concerned with the requirement assessment of women for capacity building for practicing post harvest activities of vegetables. Reviews of related literatures representing this study have been presented in this Chapter.

2.1 Reviews Related to Studies on Capacity Building of Women

Chandramoni (2005) observed that involvement of women was essential in all stages of economic and social activities. Therefore, organizing women in self help groups (SHGs) will enhance the stains of women as participants, decision maker and beneficiaries in democratic, economic and cultural sphere of life. SHGs have included a great confidence in the minds of rural women to succeed in their day to day life.

Pankajam *et al.* (2005) found that the rural woman was disadvantages compared to her urban counterpart. The profile of rural women was that of illiterate, ignorant, superstitious, suppressed and oppressed because of their limited skills. The rural women need to be trained, educated and organized so that she is empowered to be equal to her counterpart in urban area.

Sulaiman *et al.* (2005) stated that special program for farm women enables or helps women to access to improved information and resources which increase agricultural production significantly. They also stated that to make sustainable improvement in women's livelihoods, women's access to employment and income generating opportunities sources of credit, skill for establishing enterprises etc. should have to be improved.

Fisher and Sriram (2002) reported that Indian micro-finance to explore how it can be design in practice, to contribute in a wide range of development objectives. They also reported that including providing social and economic security, promoting livelihoods; building democratic people's organizations; empowering women and changing wider system within society.

Rahman *et al.* (2002) found that women's participation in economic activity not only increases their income but also generates some secondary influences on the life and attitude of these women. If women earn money, they have more prominent role in family's decision making with respect to expenditure of income and other related family matters. Such an active participation by women may help to develop their personality as well as help the family by making it possible to take more judicious decisions.

Khan (1999) reported that micro-finance programs are increasingly popular in Bangladesh. The paper examines the loan use pattern on women involved in wage employment and the benefits they gain from such loans. It is, thus, argued that more employment opportunities should be created for women as these would help to promote economic and social empowerment.

Amin and Hadi (1998) showed that age and years of schooling were positively correlated with buying capacity and decision making role in the household. Buying capacity and decision making role and power relation with the husband increased higher for the women who were involved in credit based programs than for the women who were not involved.

Begum and Biswas (1998) found that education, women's income and employment had positive impact on decision making power of women. Mobility of women was also positively related with education, women's income, employment and involvement with development institutions and mass media contact. Women's empowerment is the combined effect of multi-dimensional factors, such as disseminating ability, autonomy, mobility etc.

Kabeer (1998) observed that earning an independent income through credit access has shown to lead to an increase in women's ability to increase 'voice' in the household decision making process.

Bunu (1996) in her study examined the relationship between women's access to training and their empowerment with special reference to Bangladesh situation| Women empowerment was measured in terms of raising awareness, self-confidence, economic independence and decision making process in the

household. It was revealed that training had an impact of the behavioral predisposition. Skills of women were also developed through skill development training.

Hashemi *et al.* (1996) found that group based meeting promotes social empowerment of women by providing an opportunity for initiating a greater sense of awareness of social and political issues which have been recognized to promote personal empowerment,

Ackerly (1995) noted that when women members play leadership roles, group leaders and/or centre leaders might experience an increased sense of self-confidence and self-worth. Similarly, in programs where credit groups are federated at a spatially higher level group meeting are significantly more empowering for women as they provide an enhanced status and greater bargaining power in local communities. He concluded that effectiveness of a credit program at empowering women depends on the success with which it defines for itself and its workers ways to challenge, while working within, the constraints on women's empowerment that may exist in the borrower's country. Support for this argument is found in the case of rural Bangladesh. Statistical evidence demonstrates the importance of a borrower's involvement in the labor, selling and accounting for the activity funded by her loan for increasing the likelihood that credit leads to empowerment

Pitt and Khandker (1995) stated that access to credit was seen as a mean of empowering of the assumption that the increased labor time of women spent in income earning work as a result of credit led to greater influence of women in household decision making.

2.2 Reviews Related to Studies on Women's Requirement Assessment

Verma *et al.* (1992) stated that in Indian, women have a crucial role to play in post harvest technology particularly that relating to winnowing and grain storage. However, little attention has been paid to food losses; it is suggested that proper handling and management needs to be taught systematically to rural women. A study of needs of training in PHT (Post Harvest Technologies) for farm women was launched which covered the involvement of women in operations, the

effectiveness of the messages on PHT transmitted in terms of knowledge grain and associated factors influencing knowledge acquisition and attitudinal change. This study was undertaken to examine women's role in PHT and the results inferred that the message of PHT can be transmitted effectively without any consideration for age, caste, education or family type, implying that need based training can overcome the barriers of personal factors or limitations. PHT is, therefore, relevant to farm women irrespective of their personal profile variables.

Chandargi and Varughese (1990) carried out a research in India to identify the subject matter areas of training with respect to food products and preparation and to determine the duration and timing of training program. They concluded that with appropriate technology transfer through training centers, food products can be improved and their quality can be standardized. Individual or group activity could help women to increase their family income by preserving and marketing of different food products. Specialists in food preparation and extension workers should work for the betterment of the rural women.

2.3 Reviews Related to Studies on Post Harvest Issues of Vegetables

Banu (2000) studied the post harvest behavior of some local vegetables where she used various post harvest treatments such as, storing vegetables in wet gunny sacks and in perforated polythene bag, washing vegetables with cool water immediately after harvest and splashing of water directly on the vegetables at an interval of four hours during storage. She stated that the post harvest losses include significant qualitative, quantitative and economic losses and these losses could be minimized by prolonging the shelf life of vegetables.

Guerra *et al.* (1998) studied the losses in the field and at harvest (in Merida State) and during marketing (in Lara Slate) in Venezuela for nine vegetables viz. lettuce, cabbage, carrot, spinach beet, leek, celery, cauliflower, broccoli and potato. Results showed the highest percentage of losses at the field level in cauliflower (37 percent), carrot (28 percent) and potato (21 percent), at harvest in cabbage (28 percent) and spinach bed (17 percent) and at marketing for broccoli (49) percent), celery (48 percent), lettuce (35 percent), cauliflower (33 percent) and leek (20 percent).

Savita *et al.* (1998) reported that participation of rural women in agricultural activities was low except for farming, bee keeping and rabbits fanning. Along with major role in household activities, rural women engage themselves in various economic activities such as, food processing (25 percent) and preparation of detergent (15 percent) that supplement family income. The major constraints reported were marketing, transport, procuring raw materials, lack of technical knowledge and no loan facilities.

Lal *et al.* (1997) estimated the marketing loss of winter vegetables in two major vegetables producing districts, which is ranged from 1.09 to 3.54 percent at farm level. The loss was higher in tomato (5.54 percent) due to higher perishability, followed by radish (2.67 percent), cauliflower (2.50 percent) and brinjal (2.33 percent).

Sharma *et al.* (1995) in a study conducted in India observed that the highest percentage of marketing loss occurred during assembling and transportation of tomato and capsicum.

2.4 Reviews on Relationship between Selected Characteristics of Women and their Capacity Building

Very few studies have been found to be specifically undertaken in a scientific way in the direction of the recent study. Therefore, an effort has been made in subsequent subsection to review some interlinked literature in this aspect.

2.4.1 Age and capacity building

Bhowmick (2004) found that there was significant but negative relationship between age and empowerment of the women beneficiaries of a selected NGO in Narshingdi district.

Naoroze (2004) in his study found that age of the rural women had no significant relationship with their empowerment.

Asaduzzaman (2003) found no significant relationship between age of rural women and their decision-making ability.

Biswas (2003) found that age of the rural women had a significant but negative relationship with their accessibility to family decision-making process.

Akter (2000) in his study found that there was a positive significant relationship between age of the women and their participation in decision-making role in the family.

Begum *et al.* (2000) in their study found that there was no significant effect of age of women on their taking household decisions.

Kumari (1999) in a study found that age of rural women had no significant relationship with their performance in farm decision-making.

2.4.2 Education and capacity building

Sarkar (2005) stated that there was significant and positive relationship between level of education of the women beneficiaries of CONCERN Bangladesh and their level of empowerment.

Bhowmick (2004) found that there was significant positive relationship between education and empowerment of the women beneficiaries of a selected NGO in Narshingdi district.

Naoroze (2004) in his study found that personal education of the rural women had a significant relationship with their empowerment.

Mahmud (2002) found significant relationship between number of schooling spent by women and their empowerment.

Akter (2000) in his study found that there was a positive significant relationship between education of women and their participation in decision-making role in the family.

Asaduzzaman (2003) found significant relationship between education of rural women and their decision-making ability.

Biswas (2003) found that education of the rural women had a significant and positive relationship with their accessibility to family decision-making ability.

2.4.3 Dependency ratio and capacity building

Sarkar (2005) revealed that there was significant but negative relationship between family size of the women beneficiaries of CONCERN Bangladesh and their level of empowerment.

Bhowmick (2004) found that there was no significant relationship between family size and empowerment of the women beneficiaries of a selected NGO in Narshingdi district.

Naoroze (2004) in his study found that there was no significant relationship between family size of rural women and their empowerment.

Asaduzzaman (2003) found no significant relationship between family size of rural women and their decision-making ability.

2.4.4 Farm size and capacity building

Sarkar (2005) concluded that there was no significant relationship between family farm size of the women beneficiaries of CONCERN Bangladesh and their level of empowerment.

Bhowmick (2004) found that there was no significant relationship between farm size and empowerment of the women beneficiaries of a selected NGO in Narshingdi district.

Naoroze (2004) in his study found that there was no significant relationship between family size of rural women and their empowerment.

Asaduzzaman (2003) found no significant relationship between farm size of rural women and their decision-making ability.

Kumari (1999) found no significant relationship between rural women's socio-economic status and their participation in farm decision-making.

Bhaumik *et al.* (1996) in a study found that the socio-economic status of the rural women had no significant relationship with their performance in decision-making process.

2.4.5 Annual family income and capacity building

Sarkar (2005) reported that there was no significant relationship between annual family income of the women beneficiaries of CONCERN Bangladesh and their level of empowerment.

Bhowmick (2004) found that there was significant and positive relationship between annual income and empowerment of the women beneficiaries of a selected NGO in Narshingdi district.

Naoroze (2004) in his study found significant relationship between family annual income of rural women and their empowerment

Asaduzzaman (2003) found significant relationship between annual income of rural women and their decision-making ability.

Biswas (2003) found that income of the rural women had no significant relationship with their accessibility to family decision-making process.

Begum *et al.* (2000) found that there was no significant effect of gross income from homestead agro-forestry practices of the women on their making household decisions.

CIRDAP's study (1998) buttressed this condition that working women with access to personal income exhibit a greater degree of autonomy and participation in house hold decision-making leading to better feeling of self-worth and high status within the households. The central message of this is that economic improvement of women is a fundamental issue for attaining reasonable degree of empowerment.

BRAC (1995) reported that family income of rural women had significant effect on their decision-making, power, status in the family and mobility. It was also found that individual contact of the rural women had significant influence on their improvement of knowledge, attitude and skills.

2.4.6 Training received and capacity building

Sarkar (2005) revealed that there was significant and positive relationship between training received by the women beneficiaries of CONCERN Bangladesh and their level of empowerment.

Naoroze (2004) in his study found that there was no significant relationship between training received of rural women and their empowerment.

Asaduzzaman (2003) found significant relationship between training received of rural women and their decision-making ability.

2.4.7 Credit received and capacity building

Sarkar (2005) in his study concluded that there was significant and positive relationship between credit received by the women beneficiaries of CONCERN Bangladesh and their level of empowerment.

Mahmud (2002) found that women's participation in micro-credit program was associated with greater access to household income. Women's access to household income was negatively related to the degree of male involvement in income earning and also positively related to the degree of involvement in income earning by her.

Goetz and Gupta (1996) and Ackerly (1995) found that loan reception was not empowering women in Bangladesh because institutions and norm were generally not favorable for women's independent use of NGO loans.

Hashemi *et al.* (1996) and Kabeer (1998) found that loan reception was empowering the women in Bangladesh.

2.4.8 Knowledge on vegetables production and capacity building

Sarkar (2005) in his study stated that there was significant and positive relationship between knowledge of the women beneficiaries of CONCERN Bangladesh and their level of empowerment.

Bhowmick (2004) found that there was significant and positive relationship between agricultural knowledge and empowerment of the women beneficiaries of a selected NGO in Narshingdi district.

Azad (2003) mentioned from his research findings that there was positive significant relationship between agricultural knowledge of the women and their participation in decision making role in the family regarding farming activities.

Akter (2000) reported that there was positive significant relationship between agricultural knowledge of the women and their participation in decision making role in the family.

2.5 Conceptual Framework of the Study

The present study was concerned with the women's requirements for capacity building in post harvest activities of vegetables. Capacity building is a complex idea and it may be affected through interacting forces of many other characteristics and social propaganda in their surroundings. In this study, it could be expected that 'women requirement for capacity building' as dependent variable which would be influenced by selected characteristics of the respondents as independent variables viz. age, education, dependency ratio of the family, farm size, annual family income, decision making capacity in the family, training exposure, credit received, knowledge on vegetables production and use of post harvest technology. The conceptual model of the study has been presented in Figure 2.1.

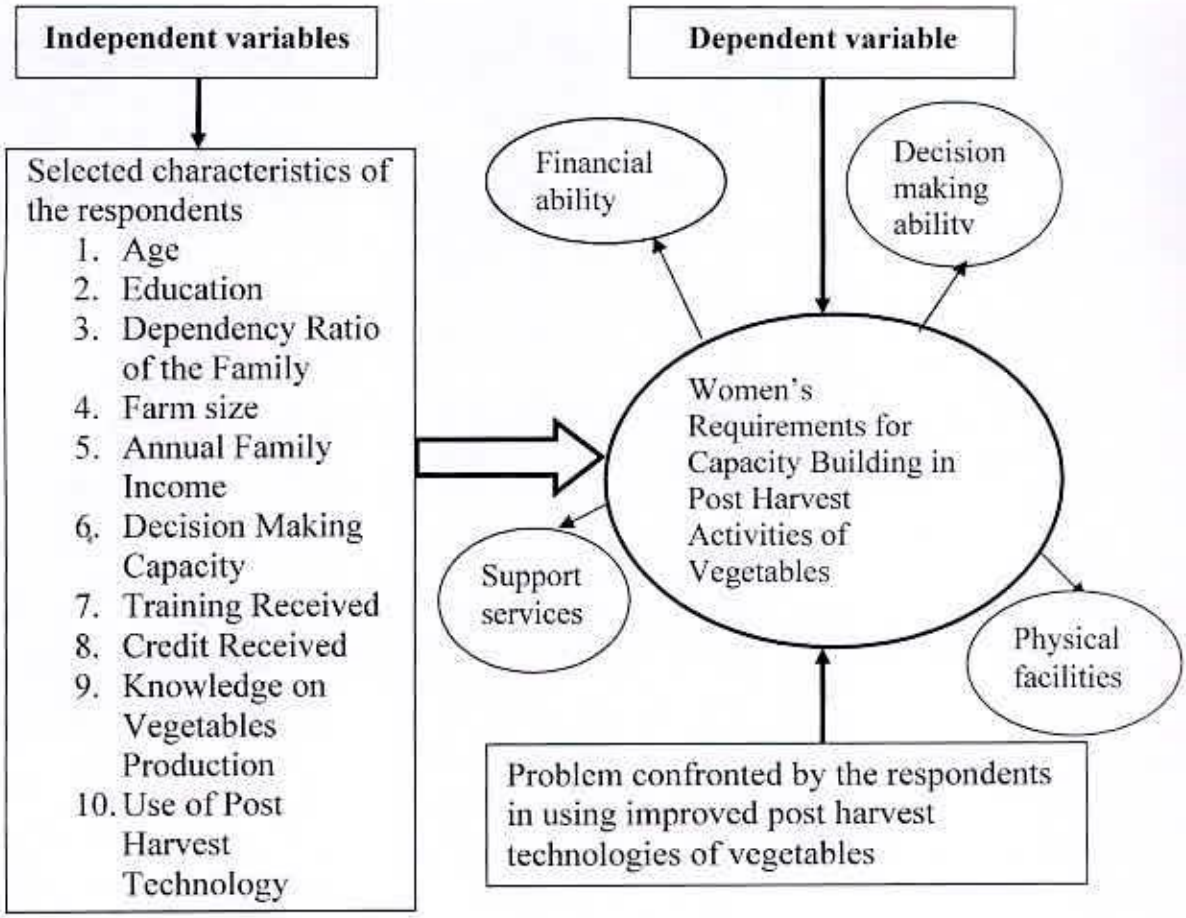

Fig. 2.1 A simple conceptual framework of the study

CHAPTER 3

METHODOLOGY

Methodology deserves a very careful consideration in a scientific research. Methodology of any study should be such as to enable the researcher to collect valid and reliable information to analyze the same properly and to arrive at appropriate decisions. Methods and produces followed in conducting this study has been discussed in this chapter.

3.1 Locale of the Study

Roailbari union of Kendua upazila under Netrokona district was purposively selected as the locale of the study. Considering time, money, resources, availability of vegetables growers and communication facilities two villages namely Puranbari and Amtala from Roailbari union were randomly selected as a locale of the study. A map of Netrokona district showing Kendua upazila has been presented in Figure 3.1. Again a map of Kendua upazila showing the study union has been presented in Figure 3.2.

3.2 Population and Sample of the Study

The researcher himself with the help of the Sub-Assistant Agriculture Officer (SAAO) of these villages prepared an updated list of all the women vegetables growers. The total number of growers in these villages was 995, which constituted the population of the study. One hundred beneficiaries were randomly selected from the population as the sample by taking 10 percent from each village. A reserve list of 20 beneficiaries (2% of the population) was also prepared. The respondents in the reserve list were used only when a respondent in the original list was not available for interview. The distribution of the population and the sample (including in the reserve list) is shown in Table 3.1.

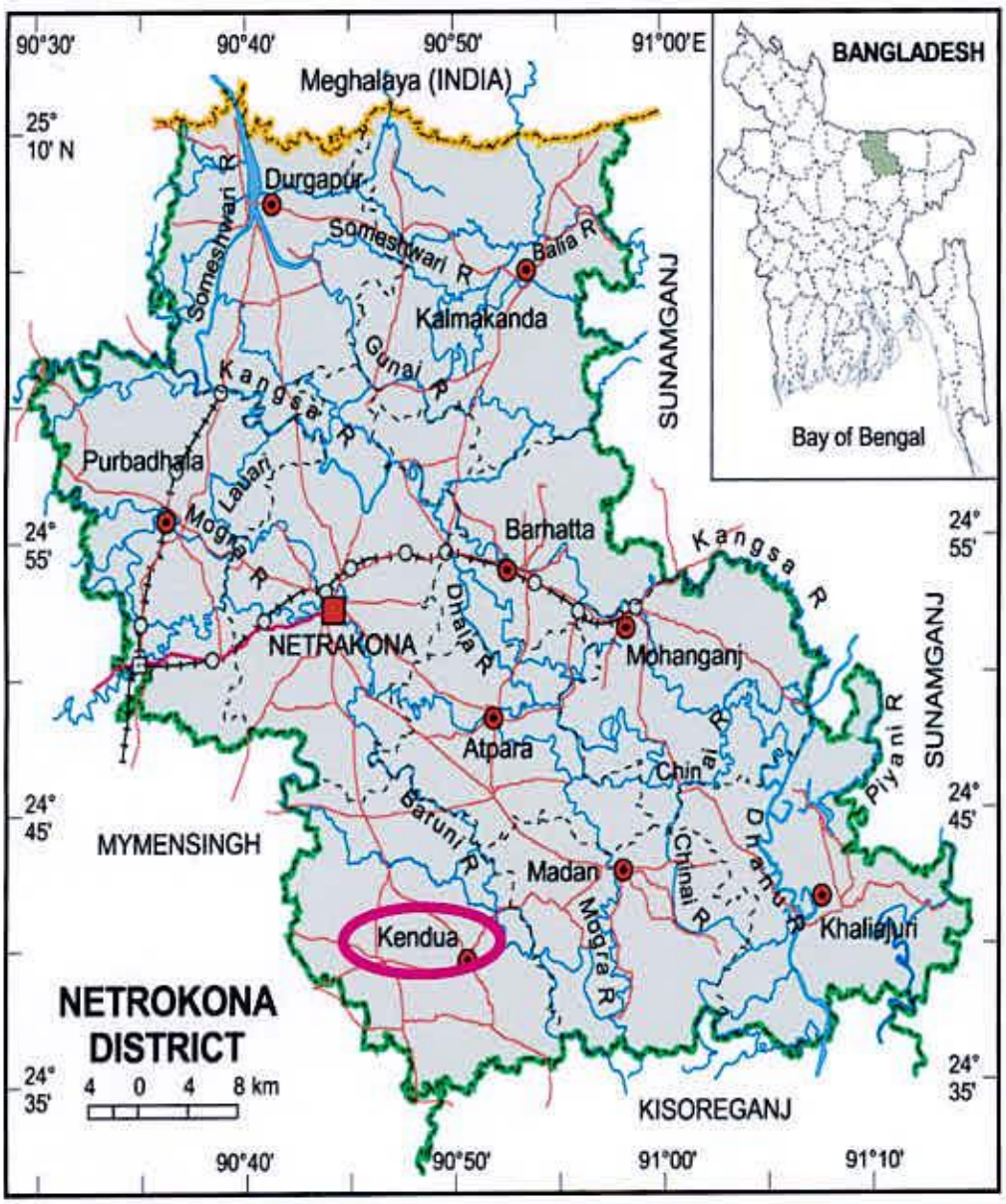

Fig. 3.1 A map of Netrokona district showing Kendua upazila

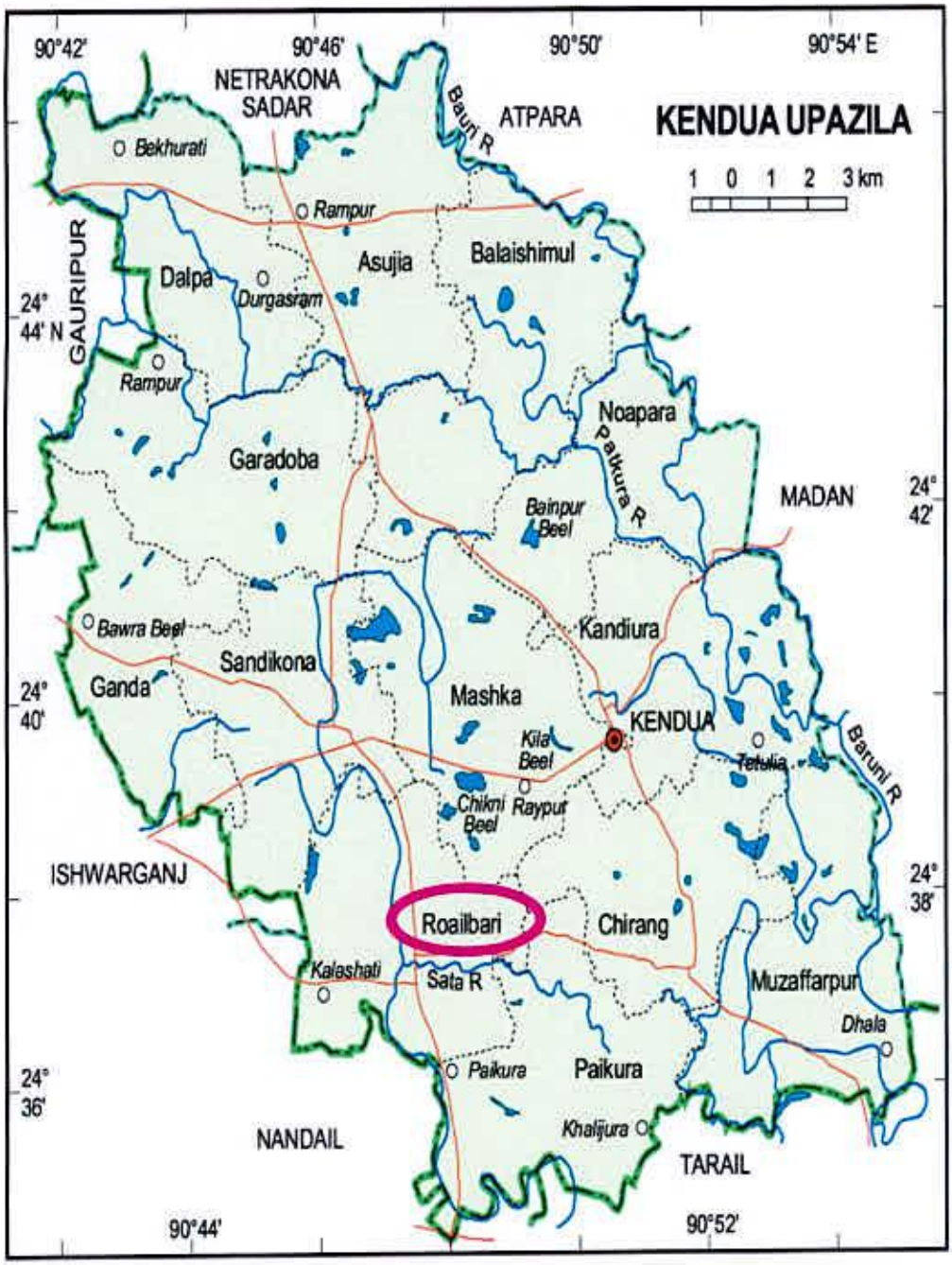

Fig. 3.2 A map of Kendua upazila showing the study union

Table 3.1 Distribution of population and sample of women vegetables growers

Villages	No. of population	Sample size	No. of respondents in the reserve list
Puranbari	532	54	11
Amtala	463	46	9
Total	995	100	20

3.3 Variables of the Study

Independent and dependent variables of the study are presented below:

3.3.1 Independent variables

The selected characteristics of the respondents were considered as independent variables which were as follows:

i) Age
ii) Education
iii) Dependency ratio of the family
iv) Farm size
v) Annual family income
vi) Decision making capacity
vii) Training received
viii) Credit received
ix) Knowledge on vegetables production
x) Use of post harvest technology

3.3.2 Dependent variable

Women's requirements for capacity building in post harvest activities of vegetables were the main focus of the study. Hence, it constituted the dependent variable.

3.4 Measurement of Variables

The procedures followed in measuring the independent and dependent variables are presented below:

3.4.1 Measurement of independent variables

3.4.1.1 Age

Age of a respondent was measured in terms of actual years from her birth to the time of interview. A score of one (1) was assigned for each year of age. It was measured in complete years as reported by a respondent.

3.4.1.2 Education

Education was measured on the basis of formal education. It was expressed in terms of year of schooling completed by a respondent. One score was given for each complete year of schooling. If a respondent does not know reading and writing his score was zero. A score of 0.5 was given to a respondent who only could sign his or her name only.

3.4.1.3 Dependency ratio of the family

Dependency ratio of the family is the proportion of dependent family members to the total earning members. The family members included family head and other dependent members like husband/wife, children, etc. who lived and ate together. Dependent family members were those who were unemployed in the family. It was determined by subtracting the number of earning members from total number of family members. Finally, dependency ratio was computed with the following formula:

$$\text{Dependency ratio} = \frac{\text{Total number of family members} - \text{Total number of earning members}}{\text{Total number of earning members}}$$

3.4.1.4 Farm size

Farm size of a respondent referred to the total area of land on which her family carried out fanning operation, the area being in terms of full benefit to the family. It was measured in hectares for each respondent using the following formula (Hasan, 2006):

$$FS = A_1 + A_2 + A_3 + \tfrac{1}{2}(A_4 + A_5)$$

Where,

FS = Farm size

A_1 = Homestead area

A_2 =Own land under own cultivation

A_3 = Cultivated area taken on lease by a respondent from others

A_4 = Land taken from others on borga

A_5 = Land given to others on borga

3.4.1.5 Annual family income

Income referred to the total financial earnings of a household from farm (crops, livestock, poultry and fish) and non-farm sources (service, business, selling labor, bank interests, remittance, financial help from relatives, etc.). It was expressed in Taka. In measuring this variable, total earning in Taka of a respondent was converted into score. A score of one was given for every 1000 Taka.

3.4.1.6 Decision making capacity

Decision making capacity was measured on the basis of a respondent's ability to make decision in the family regarding 10 selected social activities. A score was given against each of the activities by asking question on the same, such as, '0' for not at all, 1 for joint decision, mainly by other family members, '2' for joint decision, equally by self and others, '3' for joint decision, mainly by self, and '4' for full decision by self. Finally sum of the scores was given to each respondent. In this variable the total scores might range between 0 to 40, where '0' indicated no capacity to make decision and '40' indicated full capacity to make decision in the family.

3.4.1.7 Training received

This referred to the days of training which an individual received in her life. One score was given for day training. The scores obtained in respect of all the training received by an individual respondent were added to determine her total scores of training received

3.4.1.8 Credit received

It refers to the amount of money received by a respondent as loan from different sources. It was expressed in Taka. The total credit in Taka was converted into credit received score. A score of one was given for each thousand Taka loan.

3.4.1.9 Knowledge on vegetables production

Knowledge on vegetables production of an individual referred to the extent of knowledge about various aspects of vegetables production. For measuring knowledge on vegetables production, the respondents were asked 16 questions about vegetables production. Score was assigned correct responses of different questions as 2 and 3 according to the nature of the questions. Thus different scores were assigned for the correct responses for different questions. Correct responses were given the highest score of the respective questions. Consequently, for correct responses to all 16 questions a respondent could secure a total score of 45, while for wrong responses to all the questions she could score zero (0). Thus, knowledge on vegetables production of the respondents could range from 0 to 45.

3.4.1.10 Use of post harvest technology

A four-point scale was used for computing the extent of use of post harvest technologies of farm produces. Weights of responses against the technologies were assigned 0, 1, 2 and 3 for 'not at all', 'rarely', 'occasionally' and 'regularly' respectively. The weights of responses of all the post harvest technologies a respondent adopted were added together to obtain the total score of use of post harvest technology. The score could range from 0 to 18, where '0' indicated no use and '18' indicated highly use of post harvest technology.

3.4.2 Measurement of dependent variable

Women's requirements for capacity building in post harvest activities of vegetables were the dependent variable of the present study. To measure the extent of requirements for capacity building of women four dimensions of capacity building were included. They were: requirements for financial ability (capital, credit, labour cost and equipments and materials cost), requirements for decision making ability (harvesting, grading, packaging, processing, storing and selling of vegetables), requirements for support services (storage facilities, marketing

facilities, transport facilities, credit availability, labour availability), and requirements for physical facilities (processing ground, processing materials/equipment, store house, sales centers and vehicles). The dimensions were measured on a four-point rating scale. Scores were assigned as 0, 1, 2 and 3 for 'no', 'low', 'medium' and 'high' respectively. The scores of all items of each dimension were added to obtain the total score of a single dimension. Finally, scores of all the four dimensions formed the total score of the extent of requirements for capacity building of women for a respondent. Thus, total score of a subject for this variable could range from 0 to 60, where '0' indicated 'no requirement' and '60' indicated 'high requirements' for capacity building of women towards capacity building.

3.5 Measurement of Problem Confrontation

To find out the problems faced by the women, the respondents were asked 10 questions of different issues on post harvest activities of vegetables. A four point scale was used for computing the problem score of a respondent. For each constraint score of '0', '1', '2' and '3' was assigned to indicate extent of constraint as 'not at all', 'low', 'medium' and 'high' respectively. The total scores were computed for each respondent by adding her scores for all the problems. The possible range of constraint score could be 0 to 30 where '0' indicated no problems an '30' indicated highest problems in respect of using post harvest activities of vegetables.

To ascertain the comparison among the problems, Problem Confrontation Index (PCI) was computed using the following formula:

$PCI = (P_h \times 3) + (P_m \times 2) + (P_l \times 1) + (P_n \times 0)$

Where, PCI = Problem Confrontation Index

P_h = Number of respondents having high problem

P_m = Number of respondents having medium problem

P_l = Number of respondents having low problem

P_n = Number of respondents having not any problem at all

3.6 Preparation of Data Gathering Instrument

In order to collect relevant information, an interview schedule was prepared carefully keeping the objective of the research in mind. The questions and statements obtained in the schedule were simple, direct and easily understandable to the respondents. Appropriate scales and measurement techniques were developed to ensure correct responses in the variables concerned.

After devoting considerable time and efforts to prepare the interview schedule, the researcher felt further improvement of the same. The interview schedule was pre-tested with 10 respondents under actual situation. Necessary corrections, modifications and additions were made in the interview schedule on the basis of results of pre-test. The interview schedule was than printed in its final forms. A copy of the interview schedule in English version has been presented in appendix-A.

3.7 Data Collection Procedure

The researcher himself collected data from the sample respondents through the personal contact with the help of interview schedule during the 10 March to 10 April, 2008. Before starting collection of data, the researcher met the Sub-Assistant Agriculture Officer (SAAO) of the two study villages. The researcher also discussed the objectives of the present study with the respondents so that they did not feel any hesitate at the time of interview. However, if any respondent failed to understand any question, the researcher took necessary care to explain the issue as far as possible. After completion of the interview, it was checked and editing was done in case of necessity. The researcher did not face any major problem in collecting data. Excellent cooperation and coordination were extended by the respondents and other concerned persons at the time of data collection.

3.8 Processing of Data

Data obtained from the respondents were coded, compiled, tabulated and analyzed in accordance with the objectives of the study. Qualitative data were converted to quantitative data by means of suitable scoring to facilitate analysis and interpretation.

3.9 Categorization

For describing the various independent and dependent variables, the respondents were classified into several categories in respect of each variable. These categories were developed by considering the nature of distribution of the data and general understanding prevailing in the social system. The procedures for categorization of data in respect of different variables are elaborately discussed in Chapter 4.

3.10 Method of Data Analysis

The collected data were complied, tabulated, coded and analyzed in accordance with the objectives of the study. The statistical measures such as, number and percentage distribution, range, mean, standard deviation were used for describing the variables of the study. To find out the relationships between women's requirements for capacity building in post-harvest activities and their selected characteristics, the Pearson's Product Correlation co-efficient (r) was computed. Correlation matrix was also computed to determine the inter-relationships among the variables. If the computed value of co-efficient of correlation 'r' was equal or greater than the tabulated value at 0.05 level of significance for the 98 degree of freedom, the null hypothesis was rejected and it was concluded that there was significant relationship between the concerned variables. However, when the computed value of co-efficient of correlation was found to be smaller than the tabulated value at 0.05 level of significant for the relevant (98) degree of freedom, it was concluded that the null hypothesis could not be rejected and hence there was no relationship between the concerned variables.

CHAPTER 4

RESULTS AND DISCUSSION

A sequential and detailed discussion on the findings of the study has been presented in this chapter. The chapter is divided into four sections. In the first section, independent variables i.e. characteristics of the women vegetables growers have been discussed. The second section dealt with dependent variable (women's requirement for capacity building in post harvest activities of vegetables) and in the third section the relationships between the dependent and independent variables have been discussed. Finally, in the fourth section problem faced in using post harvest technologies of vegetables has been discussed.

4.1 Characteristics of the Women

There were various characteristics of the women that influenced their extent of their requirements for capacity building in post harvest activities of vegetables. In the present study, ten characteristics of the women were selected as independent variables, which included age, education, dependency ratio of the family, farm size, annual family income, decision making capacity, training received, credit received, knowledge on vegetables production and use of post harvest technology. The characteristics of the respondents have been presented below:

4.1.1 Age

Age of the respondent women ranged from 21 to 47 years with a mean of 32.7 years and standard deviation of 5.17. However, based on their age the women were classified into three categories as young, middle-aged and old.

Table 4.1.1 Distribution of the respondents according to their age

Categories	Respondents		Mean	S.D.
	Number	Percent		
Young (up to 35 years)	32	32	32.7	5.17
Middle aged (above 35 years)	68	68		
Total	100	100		

The Table 4.1.1 revealed that 68 percent of the respondents were middle-aged, 32 percent were young and none of them were old. It should be mentioned here that more than half of the respondents were in middle-aged category and none of them were old. This was so because the respondents of the present study were selected as the rural women who were involved in vegetables production not only for their family needs but also for commercial purpose.

4.1.2 Education

The level of education of the respondents ranged from 0 to 14, the average being 6.2 with a standard deviation of 4.15. According to national standard of classification, among the respondents, 9 percent were illiterate, 37 percent had education at primary level, 49 percent had education at secondary level and 5 percent of them had education at higher secondary level.

Table 4.1.2 Distribution of the respondents according to their education

Categories	Respondents		Mean	S.D.
	Number	Percent		
Illiterate (0)	9	9	6.2	4.15
Primary (1-5)	37	37		
Secondary (6-10)	49	49		
Higher Secondary (> 10)	5	5		
Total	100	100		

Data presented in Table 4.1.2 indicated that almost half of the respondents (49 percent) of the study area secured secondary level of education. It was interesting that 91 percent of the respondents were literate. It was quite logical, because only 10 percent of the respondents were old and education was generally negatively correlated with age. So, most of the respondents were literate. Education helps individuals to become conscious of their environment and it broadens outlook of the people and leads them to explore new ideas to solve problems.

4.1.3 Dependency ratio of the family

The dependency ratio of the family of the respondents ranged from 0.55-6. The mean was 5.2 and standard deviation was 1.11. Based on the dependency ratio value, the respondents were classified into three categories.

Table 4.1.3 Distribution of the respondents according to their dependency ratio of the family

Categories	Respondents		Mean	S.D.
	Number	Percent		
Low (up to 3)	28	28	5.2	1.11
Medium (4-5)	60	60		
High (Above 5)	12	12		
Total	100	100		

Computed data indicated that 28 percent of the respondents had low dependency ratio while 60 percent of the respondents had medium and 12 percent of them had high dependency ratio of the family (Table 4.1.3). Dependency ratio expresses how many non-earning family members are dependent on an earning member and higher dependency ratio of the family indicates that more number of non-earning family members is dependent on a single earning member of the family. Table 4.1.3 revealed that most of the respondents had medium dependency ratio of their family. It was due to higher unemployment rate of the study area.

4.1.4 Farm size

Farm size of the women ranged from 0.02 to 1.45 hectares having an average of 0.5 hectares and standard deviation of 0.27. On the basis of farm size of the respondents, they were classified into three categories. Data presented in Table 4.1.4 showed that the highest proportion (67 percent) of the respondents had small while 19 percent and 14 percent of them had marginal and medium farm size respectively.

Table 4.1.4 Distribution of the respondents according to their farm size

Categories	Respondents		Mean	S.D.
	Number	Percent		
Marginal (0.021-0.2)	19	19	0.5	0.27
Small (0.21-1.0)	67	67		
Medium (1.1-3)	14	14		
Total	100	100		

The findings indicated that most of the respondents were in the small farm size category. It is a general trend in Bangladesh that farm size of the people is being decreased day by day mainly due to land fragmentation through generation to generation. The situation in the study area was so worse that none of the respondents had large farm size.

4.1.5 Annual family income

Annual family income of the respondents ranged from 16 to 312 thousand taka with a mean of 62.25 thousand taka and standard deviation of 10.64. On the basis of annual family income, the respondents were divided into three categories.

Table 4.1.5 Distribution of the respondents according to their annual family income ('000' Tk.)

Categories	Respondents		Mean	S.D.
	Number	Percent		
Low (up to 50)	32	32	62.25	10.64
Medium (51-100)	47	47		
High (Above 100)	21	21		
Total	100	100		

Table 4.1.5 showed that the highest (47 percent) proportion of the women had medium annual family income while 32 percent and 21 percent of them had low and high annual family income respectively.

Findings revealed that most (79) of the respondents had low to medium annual family income. Since most of the respondents had small to marginal farm size and less number of earning member in the family, the annual family income tended to medium to low.

4.1.6 Decision making capacity

Decision making capacity score of the respondents ranged from 4 to 32 with a mean of 15.25 and standard deviation of 3.34. On the basis of decision making capacity, the respondents were divided into three categories.

Table 4.1.6 Distribution of the respondents according to their decision making capacity

Categories	Respondents		Mean	S.D.
	Number	Percent		
Weak (up to 14)	18	18	15.25	3.34
Moderate (15-23)	66	66		
Strong (24-32)	16	16		
Total	100	100		

Data in the Table 4.1.6 showed that the highest (66 percent) proportion of the women had moderate capacity while 18 percent of them had weak and the rest 16 percent of them had strong decision making capacity in the family. Thus, majority (82 percent) of the respondents had moderate to weak capacity of decision making. Decision making capacity of the women depended on mainly annual family income and dependency ratio of the family. The majority of the respondents had medium annual family income and dependency ratio of the family and accordingly their decision making capacity tended to moderate.

4.1.7 Training received

Training received score of the respondents ranged from 0 to 17 with a mean of 6.2 and standard deviation of 4.14. On the basis of training received the respondents were divided into three categories.

Table 4.1.7 Distribution of the respondents according to their training received

Categories	Respondents		Mean	S.D.
	Number	Percent		
Short-term (up to 4)	79	79	6.2	4.14
Mid-term (5-8)	15	15		
Long-term (Above 8)	6	6		
Total	100	100		

Data contained in the Table 4.1.7 showed that the highest (79 percent) proportion of the women had short-term training received while 15 percent of them had mid-term training received and only 6 percent of them had long-term training received. Since most of the respondents had medium to low farm size and annual family income, their training received was also low.

4.1.8 Credit received

The score of credit received by the respondents ranged from 0 to 35 thousand Tk. with a mean of 8.62 thousand taka and standard deviation of 6.14. On the basis of credit received the respondents were divided into three categories.

Table 4.1.8 Distribution of the respondents according to their credit received ('000' Tk.)

Categories	Respondents		Mean	S.D.
	Number	Percent		
Low (up to 10)	80	80	8.62	6.14
Medium (11-20)	15	15		
High (Above 20)	5	5		
Total	100	100		

Data furnished in the Table 4.1.8 indicated that the highest (80 percent) proportion the women had small credit received while 15 percent had medium and the rest 5 percent of them had high credit received. Rural women mainly get credit facilities from different NGOs and their relatives and friends. But in the study area the amount of credit received was not satisfactory.

4.1.9 Knowledge on vegetables production

The scores of knowledge on vegetables production of the respondent ranged from 20 to 38 against the possible range of 0 to 45. The average was 24.2 with a standard deviation of 8.44. On the basis of the scores obtained, the respondents were categories into three groups.

Table 4.1.9 Distribution of the respondents according to their knowledge on vegetables production

Categories	Respondents		Mean	S.D.
	Number	Percent		
Fair (upto 25)	53	53	24.2	8.44
Good (26-32)	36	36		
Very good (Above 32)	11	11		
Total	100	100		

Data contained in Table 4.1.9 indicated that most (53 percent) of the respondents had fair knowledge, while 36 percent had good and the rest 11 percent had very good knowledge on vegetables production. Knowledge is derived from education and previous experience. The education level of the women in the study area was primary to secondary i.e. moderate level. This level of education brought the light of knowledge into them. Consequently, most of the respondents had good level of knowledge on vegetables production.

4.1.10 Use of post harvest technology

The obtained scores of use of post harvest technology of the respondents ranged from 4 to 8. The average was 6.56 with a standard deviation of 2.63. On the basis of the scores obtained, the respondents were categories into three groups.

Table 4.1.10 Distribution of the respondents according to their use of post harvest technology

Categories	Respondents		Mean	S.D.
	Number	Percent		
Less (up to 4)	56	56	6.56	2.63
Medium (5-8)	44	44		
High (Above 8)	0	0		
Total	100	100		

Table 4.1.10 indicated that the highest proportion (56 percent) of the respondents had less use while the rest 44 percent had medium and none of them had high use of post harvest technology. The findings revealed that most of the respondents had less use of post harvest technology of farm produces. It was logical because most of the respondents had small farm size which had positive relation with the use of post harvest technology.

4.2 Women's Requirements for Capacity Building

In the present study, 'capacity building' of the women for using post harvest technologies of vegetables was defined as the extent to which they have the accessibility to financial, physical, support services as well as the ability to make decision about utilizing the post harvest facilities of vegetables. Requirements for capacity building of women were the main focus of the present research work. Four dimensions of capacity building were selected to measure the extent of women's requirements for capacity building. The findings have been interpreted in following subsections.

4.2.1 Overall requirements for capacity building

The extent of requirements for capacity building of women was assessed in terms of requirements index for capacity building (RICB). The RICB values could range from 0 to 60. The observed RICB values ranged from 28.21 to 50.56 with and average of 34.88 and standard deviation of 5.3. Based on their RICB values the respondents were classified into three categories as shown in Table 4.2.

Table 4.2.1 Distribution of the respondents according to their requirements for capacity building

Categories	Respondents		Mean	S.D.
	Number	Percent		
Low (up to 30)	3	3	34.88	5.3
Medium (31-40)	34	34		
High (Above 40)	63	63		
Total	100	100		

Data presented in the Table 4.2 showed that the highest proportion (63 percent) of the respondents had high extent of requirements while 34 percent of them had medium and only 3 percent of them had low extent of requirements for capacity building. The findings clearly indicated that almost two-thirds (97 percent) of the respondents had high to medium requirements for capacity building in post harvest activities of vegetables. It was observed in the study area while collecting the data that there was scarcity of post harvest facilities of vegetables and even a little facility was available but those were not in accessible form for the rural women. Thus, the respondents logically felt high requirements for their capacity building for practicing post harvest activities of vegetables.

4.2.2 Dimension-wise women's requirements for capacity building

Four dimension of capacity building were selected to assess the extent of requirements for capacity building of women in post harvest activities of vegetables. The computed RICB values of all the dimensions have been shown in Table 4.2.2.

Table 4.2.2 Dimension-wise distribution of the respondents according to their requirements for capacity building

Dimensions	Categories	Respondents		Mean	S.D.
		Number	Percent		
Financial ability	Low (up to 3)	0	0	6.21	2.5
	Medium (4-8)	56	56		
	High (Above 12)	44	44		
Decision making ability	Low (up to 5)	0	0	8.43	3.76
	Medium (6-12)	36	36		
	High (Above 12)	64	64		
Support services	Low (up to 4)	0	0	7.3	2.2
	Medium (5-10)	47	47		
	High (Above 10)	53	53		
Physical facilities	Low (up to 5)	0	0	8.62	1.88
	Medium (6-10)	77	77		
	High (Above 10)	23	23		

Data presented in Table 4.2.2 indicated that in case of financial ability and support services most of the respondents fell in medium requirements category but in case of decision making and physical facilities most of the respondents fell in high requirements category. It was normal that the women did not have low requirement for any dimensions of capacity building. It was quite logical because none of the dimensions existed in satisfactory level rather in low level. Thus, it was a simple analogy that the component available in low quantity would be felt as high requirement component.

4.3 Relationships between the Selected Characteristics of the Women and Their Extent of Requirements for Capacity Building

Pearson's Product Moment Coefficient of Correlation (r) was computed in order to explore the relationships between the selected characteristics of the women and their extent of requirements for capacity building in post harvest activities of vegetables. The coefficient of correlation (r) was used to test the null hypothesis regarding the relationship between two concerned variables. The null hypothesis was formulated as Ho: There is no relationship between the selected characteristics of the women and their requirements for capacity building in post activities of vegetables. The relationship between the dependent and independent variables has been presented in Table 4.3. However, the correlation dependent and independent variables for the women has been presented in Appendix-B in order to have a clear exploration of the inter-correlation among the variables.

Table 4.3 Co-efficient of correlation between selected characteristics of women and their extent of requirements for capacity building

Dependent variable	Independent variables	Co-efficient of correlation (r)	Tabulated value of 'r' with 98 df at	
			0.05 level	0.01 level
Women's requirements for capacity building in post harvest activities of vegetables	Age	0.030^{NS}	0.196	0.256
	Education	-0.107^{NS}		
	Dependency ratio of the family	0.153^{NS}		
	Farm size	-0.275**		
	Annual family income	-0.264**		
	Decision making capacity	-0.059^{NS}		
	Training received	-0.071^{NS}		
	Credit received	0.283**		
	Knowledge on vegetables production	0.226*		
	Use of post harvest technology	-0.457**		

^{NS} = Not significant

* = Correlation is significant at the 0.05 level with 98 d. f.

** = Correlation is significant at the 0.01 level with 98 d. f.

4.3.1 Age and requirements for capacity building

The correlation coefficient between age of the rural women and their extent of requirements for capacity building in post harvest activities of vegetables was 0.030 as shown in Table 4.3. Based on the computed 'r' value the relationship between age and extent of requirements for capacity building in post harvest activities of vegetables was non-significant and followed a positive trend. Hence, the concerned null hypothesis could not be rejected. Thus, it could be said that age the respondents was not an important indicator for the extent of requirements for capacity building in post harvest activities of vegetables.

Sarkar (2005) and Begum *et al.* (2000) found similar relationships between age and requirements in their respective studies. The findings were interesting and logical because major portion of the respondents were in young and middle-aged category and they were involved in using post harvest technologies of vegetables in more or less similar pattern.

4.3.2 Education and requirements for capacity building

The correlation coefficient between education of the rural women and their extent of requirements for capacity building in post harvest activities of vegetables was -0.107 as shown in Table 4.3. Based on the computed 'r' value the relationship between education and extent of requirements for capacity building in post harvest activities of vegetables was non-significant and followed a negative trend. Hence, the concerned null hypothesis could not be rejected. Thus, it could be concluded that education level of the women had no significant relationship with their extent of requirements for capacity building in post harvest activities of vegetables.

In the present research, the respondent women were mostly housewives. They had been continuing their livelihoods from the similar social background utilizing similar resources and facilities. So, their level of education could not play any significant role in their extent of requirements for capacity building for practicing post harvest activities of vegetables.

4.3.3 Dependency ratio of the family and requirements for capacity building

The correlation coefficient between dependency ratio of the family of the women and their extent of requirements for capacity building in post-harvest activities of vegetables was 0.153 as shown in Table 4.3. Based on the computed 'r' value the relationship between dependency ratio of the family and extent of requirements for capacity building in post harvest activities of vegetables was non-significant and followed a positive trend. Hence, the concerned null hypothesis could not be rejected. Thus, it was concluded that dependency ratio of the family of the women did not play significant role on their extent of requirements for capacity building in post harvest activities of vegetables.

It should be noted that dependency ratio of the family was computed using the total number of family members and of earning members of the family. It was observed that when the number of earning members of the family increased, the requirements for capacity building decreased. It was also reflected in this study but dependency ratio was not significantly correlated with the number of family members. On the other hand, requirements for capacity building had negative relationship with the total number of family members. Finally, dependency ratio of the family had no significant effect on the requirements for capacity building of women due to irregular pattern of number earning members of the family with their respective family size.

4.3.4 Farm size and requirements for capacity building

The correlation coefficient between farm size of the women and their extent of requirements for capacity building in post harvest activities of vegetables was -0.275 as shown in Table 4.3. Based on the computed 'r' value the relationship between farm size and extent of requirements capacity building in post harvest activities of vegetables was significant and followed a negative trend. Hence, the concerned null hypothesis could be rejected. Thus, it could be said that farm size of the women played significant role on their extent of requirements for capacity building in post harvest activities of vegetables.

Farm size is an important indicator of power. When the farm size increases the owners bears an increased extent of power. Thus, the women having more farm size felt fewer requirements for capacity building in post harvest activities of vegetables.

4.3.5 Annual family income and requirements for capacity building

The correlation coefficient between annual family income of the respondents and their extent of requirements for capacity building in post harvest activities of vegetables was -0.264 as shown in Table 4.3. Based on the computed 'r' value the relationship between family income and extent of requirements for capacity building in post harvest activities of vegetables was significant and followed a negative trend. Hence, the concerned null hypothesis could be rejected. Thus, it could be said family income of the women played significant role on their extent of requirements for capacity building in post harvest activities of vegetables.

Similar relationships were observed by Asaduzzaman (2003) in their respective studies. It was so, because the families having higher income might need fewer amounts of post harvest facilities of vegetables. Thus, annual family income exerted significant negative effect on the requirements for capacity building in post harvest activities of vegetables.

4.3.6 Decision making capacity and requirements for capacity building

The correlation coefficient between decision making capacity of the women and their extent of requirements for capacity building in post harvest activities of vegetables was -0.059 as shown in Table 4.3. Based on the computed 'r' value the relationship between decision making capacity and extent of requirements for capacity building in post harvest activities of vegetables was non-significant and followed a negative trend. Hence, the concerned null hypothesis could not be rejected. Thus, it was inferred that decision making capacity of the women did not influence significantly their extent of requirements for capacity building in post harvest activities of vegetables.

A women may have the capacity to make decision regarding household activities but she may form her capacity from her educational status, parents socio-economic position etc. Moreover, requirements for capacity building depend on the availability and accessibility of the facilities. Therefore, decision making capacity of the women was not significantly related with their extent of requirements for capacity building in post harvest activities of vegetables.

4.3.7 Training received and requirements for capacity building

The correlation coefficient between training received of the women and extent of requirements for capacity building in post harvest activities of vegetables was -0.071 as shown in Table 4.3. Based on the computed 'r' value relationship between training received and extent of received for capacity building in post harvest activities of vegetables was non-significant and followed a negative trend. Hence, the concerned null hypothesis could not be rejected. Thus, it was inferred that training received of the respondents were not influential to their extent of requirements for capacity building in post harvest activities of vegetables. Naoroze (2004) also found this relation between training received and requirements of the respondents in his study.

The respondents got training from different organizations they were affiliated but a very little training was conducted specifically regarding post harvest facilities of vegetables. This is why requirements for capacity building of women in post harvest activities of vegetables had no significant relationship with their previous training experience.

4.3.8 Credit received and requirements for capacity building

The correlation coefficient between credit received of the women and their extent of requirements for capacity building in post harvest activities of vegetables was 0.283 as shown in Table 4.3. Based on the computed 'r' value the relationship between credit received and extent of requirements for capacity building in post harvest activities of vegetables was significant and followed a positive trend. Hence, the concerned null hypothesis could be rejected. Thus, it could be said that credit received of the women played significant role on their extent of requirements in post harvest activities of vegetables.

The woman who received more credit needed more facilities regarding post harvest activities of vegetables to utilize her credit effectively. Otherwise, she would misuse the credit which is not helpful for her to alleviate poverty and also she would fell in critical situation. Thus, credit received was significantly and positively related with the extent of requirements for capacity building in post harvest activities of vegetables.

4.3.9 Knowledge on vegetables production and requirements for capacity building

The correlation coefficient between knowledge on vegetables production of respondents and their extent of requirements for capacity building in post harvest activities of vegetables was 0.226 as shown in Table 4.3. Based on computed 'r' value the relationship between knowledge on vegetables production and extent of requirements for capacity building in post harvest activities of vegetables was significant and followed a positive trend. Hence, the concerned null hypothesis could be rejected. Thus, it was decided that knowledge on vegetables production of the women played significant role on their extent of requirements for capacity building in post harvest activities of vegetables.

Knowledge is derived through education and training. It helps to manage any activities properly. It also broadens our mind and helps to learn new technology and helps to utilize these technologies. A knowledgeable woman is always very keen to learn new things and also very keen to utilize these things. So that her requirements regarding post harvest activities of vegetables might also very high and the result also showed this tendency.

4.3.10 Use of post harvest technology and requirements for capacity building

The correlation coefficient between the uses of post harvest technology of vegetables of the women and their extent of requirements for capacity building in post harvest activities of vegetables was -0.457 as shown in Table 4.3. Based on the computed 'r' value the relationship between the use of post harvest technology and extent of requirements for capacity building in post harvest activities of vegetables was significant and followed a negative trend. Hence, the concerned null hypothesis could be rejected. Thus, it was decided that the use of post harvest technology by the women played significant role on their extent of requirements for capacity building in post harvest activities of vegetables.

The result indicated that the women who used more post harvest technologies for more years had fewer requirements for capacity building. Probably, they had already gained access to the post harvest facilities of vegetables. So they felt fewer requirements for capacity building in post harvest activities of vegetables.

4.4 Problems Confronted in Using Post Harvest Technologies of Vegetables

Problems confronted by the women in using post harvest technologies of vegetables were measured through ten selected items of problems with a four-point rating scale. Total observed scores of constraints ranged from 15 to 24 against the possible range of 0 to 30. The average was 22.26 and standard deviation was 1.25 as shown in Table 4.4.

Table 4.4 Distribution of the respondents according to their problems confronted in using post harvest technologies of vegetables

Categories	Respondents		Mean	S.D.
	Number	Percent		
Low (up to 10)	0	0	22.26	1.25
Medium (11-20)	74	74		
High (Above 20)	26	26		
Total	100	100		

Data presented in Table 4.4 indicated that almost three-fourths of the respondents (74 percent) in the study area faced medium problem while one-fourths of them faced high problem but none of them confronted low problem in using post harvest technologies of vegetables. The range standard deviation of the scores was small. This means that almost all of respondents confronted similar problems to similar extent. This was might be due to similar socio-economic background of the respondents.

The extent of problems confronted by the women in using post harvest technologies of vegetables in terms of Problem Confrontation Index (PCI) along with their rank order based on the PFI values have been presented in Table 4.5. The measurement of the problem faced index has been presented in page 28.

Table 4.5 Ranking of problems according to problems confrontation index (PCI)

Sl. No.	Problems	PFI	Rank order
1	Lack of knowledge on post harvest activities	270	1
2	Distance from sale centre	266	2
3	Lack of marketing facility	240	3
4	Unavailability of money	222	4
5	Insufficient storage facility	215	5
6	Lack of training	212	6
7	Low access to communication media	186	7
8	Unavailability of labour	164	8
9	Low transport facility	135	9
10	Others	102	10

Data furnished in the Table 4.5 indicated that among the problems 'Lack of knowledge on post harvest activities of vegetables' was ranked first followed by 'Distance from sale centre' and 'Lack of marketing facility' while 'Low access to communication media' and 'Others' ranked last.

Some of the women in the study area were involved in post harvest activities commercially but they could not earn expectedly due lack of sale centres and proper marketing facilities. It was acute in the female headed families. They did not have the accessibility to the distant market place for the sale of their goods. Some women produced vegetables but could not perform post harvest activities like preparation of jam, jelly, pickles etc. for the lack of proper knowledge. Thus, they were considered as inefficient manpower. On the other hand, the local transport system was not satisfactory in the rural areas of Bangladesh. If this condition was good, the post harvest activities of vegetables could be satisfactory. Consequently lack of proper training facilities regarding post harvest technologies of vegetables negatively influenced the improvement of this sector. Arrangements of proper training could maximize the number of efficient manpower and increase the operational ability of the vegetables growers.

CHAPTER 5

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary of the Findings

The major findings of the study have been summarized in the following sections.

5.1.1 Characteristics of the women

Among the respondents 62 percent were middle-aged, 28 percent were young and 10 percent were old. But 9 percent of the respondents were illiterate, 37 percent had education at primary level, 49 percent had education at secondary level and only 5 percent of them had education at higher secondary level. In case of dependency ratio of the family, 28 percent of the respondents had low dependency ratio, 60 percent of the respondents had medium and 12 percent of them had high dependency ratio of the family.

The highest proportion (67 percent) of the respondents had small farm size. Again, most of the respondents (79 percent) had low and medium annual family income. On the other hand, 84 percent of the respondents had moderate to weak decision making capacity and the highest proportion (79) of them had short-term training received.

In the other cases, majority (80 percent) of the women had low credit received and more than half of the respondents (55 percent) had fair knowledge on vegetables production. Finally, the highest proportion (56 percent) of the respondents had less use while the rest 44 percent had medium and none of them had high use of post harvest technology.

5.1.2 Requirements for capacity building of women

The extent of requirements for capacity building of women was assessed in terms of requirements index for capacity building (RICB). The RICB values could range from 0 to 60. The observed RICB values ranged from 28.21 to 50.56 with and average of 34.88 and standard deviation of 5.3. The highest proportion (63 percent) of the respondents had high extent of requirements while 34 percent of

them had medium and only 3 percent of them had low extent of requirements for capacity building. The findings clearly indicated that almost two-thirds (63 percent) of the respondents had high to medium requirements for capacity building in post harvest activities of vegetables.

In case of financial ability and support services most of the respondents (56 percent and 47 percent respectively) fell in medium requirements category but in case of decision making capacity and physical facilities most of the respondents (64 percent and 77 percent respectively) fell in high requirements category.

5.1.3 Relationships between the selected characteristics of the women and their extent of requirements for capacity building

Pearson's Product Moment Coefficient of Correlation (r) was computed in order to explore the relationships between the selected characteristics of the women and their extent of requirements for capacity building in post harvest activities of vegetables. Among the ten characteristics of the respondents, three namely farm size, annual family income and use of post harvest technology showed significant and negative relationship with their extent of requirements for capacity building in post harvest activities of vegetables but credit received and knowledge on vegetables production was positively and significantly correlated with their extent of requirements of capacity building and the rest of the characteristics namely age, education, decision making capacity, dependency ratio of the family and training received did no show any significant relationship with their extent of requirements for capacity building in post harvest activates of vegetables.

5.1.4 Problems faced in using post harvest technologies of vegetables

Almost three-fourths of the respondents (74 percent) in the study area faced medium problem while one-fourths of them faced high problem but none of them faced low problem in using post harvest technologies of vegetables. According to Problem Faced Index (PFI) 'Lack of knowledge on post harvest activities of vegetables' was ranked first followed by 'Distance from sale centre' and 'Lack of marketing facility' while 'Low access to communication media' and 'Others' ranked last.

5.2 Conclusions

Based on the findings of this study the following conclusions are drawn:

- The highest proportion (63 percent) of the respondents had high extent of requirements while 34 percent of them had medium and only 3 percent of them had low extent of requirements for capacity building. Thus, the findings clearly indicated that almost two-thirds (63 percent) of the respondents had high to medium requirements for capacity building in post harvest activities of vegetables. Therefore the present situation is not satisfactory and for improvement of this sector women should get more facilities regarding post harvest technologies of vegetables.

- Majority (60 percent) of the respondents had medium dependency ratio of the family but requirements for capacity building had significant relationship with the number of earning members of the family though dependency ratio of the family was not significantly correlated with the requirements for capacity building. Thus, dependency ratio indirectly influenced the requirements for capacity building of the women.

- More than two-thirds (67 percent) of the respondents had small farm size. This variable had negative and significant relationship with the requirements for capacity building. Therefore, the women having small farm size felt more requirements for capacity building in post harvest activities of vegetables.

- Majority proportion (79 percent) of the women had low to medium annual family income and it was negatively correlated with the requirements for capacity building. So it is obvious that women having low annual family income needed more requirements for post harvest technologies.

- Majority (80 percent) of the women had low credit received and more than half of the respondents (53 percent) had fair knowledge on vegetables production and both were positively correlated with requirements for capacity building. Thus it was realized that more credit receiver and more knowledgeable women required more facilities in post harvest technologies of vegetables.

- ❖ Most of respondents (79 percent) had short-term training received and it was not significant with the requirements for capacity building of vegetables but it could exert significant effect on the requirements for capacity building when the women would be more exposed to training programs regarding post harvest technologies of vegetables.

- ❖ The highest proportion (56 percent) of the respondents had less use while the rest 44 percent had medium use of post harvest technology and it was negatively correlated with the dependent variable. Therefore, increased use of post harvest technologies facilitated them to utilize more post harvest facilities of vegetables.

5.3 Recommendations

5.3.1 Recommendations for policy implication

Based on the findings and conclusions of the study, the following recommendations could be made:

- ✓ Post harvest technologies of vegetables should be made available and accessible for the women so that they can use them properly and efficiently in commercial purposes.

- ✓ More credit and proper training should be provided for the women vegetables growers so that they can use credit and use their operational and management skills in post harvest activities of vegetables.

- ✓ Women having small farm size, low annual family income, less earning member of the family and low user of post harvest technologies of vegetables should be the target population for providing post harvest technologies of vegetables.

- ✓ Different motivational program should be arrangement by the concerned authority for the women so that they are motivated to use improved post harvest technologies and increased their knowledge on vegetables production.

- ✓ Sale centres and storage facilities should be increased in the rural areas through government and private initiatives to improve marketing facilities for the rural women.

- ✓ Ministry of LGRD and Co-operatives should take necessary steps for improving the transport system and communication facilities especially in rural areas of Bangladesh.

5.3.2 Recommendations for further study

- ✓ The present study was conducted in two villages of Roailbari union of Kendua upazila under Netrokona district. Similar studies may be conducted in other parts of the country to generalize the findings.

- ✓ The study was undertaken to explore the relationships of ten selected characteristics of the women with their extent of requirements for capacity building in post harvest activities of vegetables as dependent variable. Therefore it could be recommended that further studies should be conducted with other independent and dependent variables.

- ✓ In the present study, age, education, dependency ratio of the family, decision making capacity and training received had no significant relationship with their extent of requirements for capacity building in post harvest activities of vegetables. Hence, further studies are necessary to find out the relationships between the concerned variables to make the present findings valid.

- ✓ The present study was exclusively confined to determine the extent of women's requirements for capacity building in post harvest activities of vegetables. Further studies should be conducted to determine various aspects of capacity building of the rural women engaged in different activities.

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APPENDIX-A

(English version of the Interview Schedule)

Women's requirements for capacity building in post harvest activities of vegetables

Sample No.....

Name of the respondent.....

Village.....

Union.....

(Please answer the following questions)

1. **Age**: What is your present age? .....Years.
2. **Education**: Please mention your education qualification
   a) Cannot read and write
   b) Can sign only
   c) Study up to class .....
3. **Dependency ratio of the family:**

Please mention the number of your family members? ..... members

Please mention the number of earning members in your family? ..... members

$$\text{Dependency ratio} = \frac{\text{Total number of family members} - \text{Total number of earning members}}{\text{Total number of earning members}}$$

4. **Farm size**: Please indicate the area of land in your possession.

Sl. No.	Type of land use	Land area	
		Local unit	Actual unit (ha.)
1.	Homestead area		
2.	Land under own cultivation		
3.	Land given to others on borga		
4.	Land taken from others on borga		
5.	Land taken from others on lease		
	Total land		

5. Annual Family Income:

Please mention your last year family income.

Sources of income	Amount of income (Tk.)
1. Service	
2. Agriculture	
3. Business	
4. Others	
Total	

6. Decision making capacity:

How do you make decision in your family regarding the following household activities?

Note: (0) Not at all, (1) Joint decision, mainly by other family members, (2) Joint decision, equally by self and others, (3) Joint decision, mainly by self, and (4) Full decision by self

Sl. No.	Household activities	Extent of decision making ability				
		0	1	2	3	4
1	Decision on land (Purchase, sell, mortgage, etc.)					
2	Construction of house & farm					
3	Education of children					
4	Financial investment in business					
5	Expenditure for daily commodities					
6	Making & buying furniture & farm equipments					
7	Decision on marriage of dependent members of the family					
8	Family planning and medical					
9	Festivals					
10	Guest entertainment					

7. Training received:

Did you receive any training? ..... Yes/ No

If yes, please give the following information.

Sl. No.	Name of the training	Organizing agency	Duration (Day)

8. Credit received:
Have you received any credit from any organization? (Yes/No)

From which sources you received credit in last year? Please mention.

Sl. No.	Sources of credit received	Amount of credit received (Tk.)
1.	Bank (Sonali, Krishi, Janata, etc.)	
2.	Rural private money lender	
3.	NGOs	
4.	Friends and relatives	
5.	Neighboures	
6.	Others	
	Total	

9. Knowledge on vegetables production:
Please answer the following questions.

Sl. No.	Questions	Full marks	Obtained marks
1	Name two winter vegetables.	2	
2	Name two summer vegetables.	2	
3	Name two organic manures.	2	
4	Why organic manures are good for soil?	3	
5	What is balanced fertilizer?	3	
6	What is IPM?	3	
7	What is the benefit of mulching?	3	
8	What is the procedure of pit preparation?	3	
9	How potato seeds are prepared for planting?	3	
10	How do you store vegetables seeds?	3	
11	What is the most favourable condition of late blight of potato?	3	
12	How good quality seeds differ from bad ones?	3	
13	Which time is the favourable for insects to attack brinjal and why?	3	
14	How you protect your field from harmful insects without killing beneficial insects?	3	
15	What is the harmful effect of chemical pesticides?	3	
16	How can you control diseases of vegetables without pesticides?	3	
Total		**45**	

10. Use of post harvest technology:
Please mention your nature of using the following post harvest technologies.

Sl. No.	Technologies	Nature of use			
		Not at all	Rarely	Occasionally	Regularly
1	Cold storage				
2	Transportation by vehicles				
3	Proper grading				
4	Use proper packaging materials				
5	Processed vegetables (Jam, Jelly, etc.)				
6	Other (If, specify)				

11. Women's requirements for capacity building:
Please mention your requirements for capacity building in post harvest facilities of vegetables.

a) Requirements for financial ability:

Sl. No.	Items	Extent of requirements			
		No	Low	Medium	High
1	Capital				
2	Credit				
3	Labour cost				
4	Equipments and materials cost				

b) Requirements for decision making ability:

Sl. No.	Items	Extent of requirements			
		No	Low	Medium	High
1	Harvesting				
2	Grading				
3	Packaging				
4	Processing				
5	Storing				
6	Selling				

c) Requirements for support services:

Sl. No.	Items	Extent of requirements			
		No	Low	Medium	High
1	Storage facilities				
2	Marketing facilities				
3	Transportation facilities				
4	Credit availability				
5	Labour availability				

d) Requirements for physical facilities:

Sl. No.	Items	Extent of requirements			
		No	Low	Medium	High
1	Processing ground				
2	Processing materials/ equipments				
3	Store house				
4	Sales centres				
5	Vehicles				

12. Problems faced by the women in using improved post harvest technologies of vegetables:

Sl. No.	Problems	Extent of problems			
		Not at all	Low	Medium	High
1	Unavailability of money				
2	Unavailability of labour				
3	Low transport facility				
4	Lack of training				
5	Lack of marketing facility				
6	Lack of knowledge on post harvest activities				
7	Low access to communication media				
8	Distance from sale centre				
9	Insufficient storage facility				
10	Others				

Thanks for Co-operation

Signature of the Interviewer

Appendix-B

Correlation Matrix

	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	Y
X_1	1										
X_2	-.016	1									
X_3	.025	-.072	1								
X_4	-.121	.244*	-.103	1							
X_5	-.066	.180	-.236*	.262**	1						
X_6	.299**	-.237*	.212*	-.367**	-.198*	1					
X_7	.246*	-.191	.113	-.021	-.076	.222*	1				
X_8	.225	-.204*	.098	-.109	-.125	.145	.103	1			
X_9	.262**	-.146*	.260**	-.263**	-.271**	.213*	.304**	.228*	1		
X_{10}	-.066	.286**	-.121	.496**	.311**	-.283**	.179	.012	.182*	1	
Y	.030	-.107	.153	-.275**	-.264**	-.059	-.071	.283**	.226*	-.457**	1

* Significant at 0.05 level with 98 df
** Significant at 0.01 level with 98 df

X_1 = Age
X_2 = Education
X_3 = Dependency ratio of the family
X_4 = Farm size
X_5 = Annual family income
X_6 = Decision making capacity
X_7 = Training received
X_8 = Credit received
X_9 = Knowledge on vegetables production
X_{10} = Use of post harvest technology
Y = Women's requirements for capacity building in post harvest activities of vegetables