

Capacity Strengthening of Rural Women in Performing Post Harvest Activities of Guava: *An assessment of need*

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Abstract

Determining the extent of need for capacity strengthening of rural women to perform post harvest activities (PHAs) of guava and to explore the relationship of selected characteristics of the rural women with their extent of need for capacity strengthening were the main focuses of the study. Fifty women were randomly selected for data collection from Kuriana village under Nesarabad upazila of Pirojpur district. A pre-tested interview schedule was used to collect data from the respondents in April 2008. Most of the women (76%) had high and 24% of them had medium and none of them had low extent of need for capacity strengthening in PHAs of guava. All the women had the highest extent of need for capacity strengthening in management skill and need for physical facilities. The women had the highest (83.87%) need for capacity building in physical facilities and their lowest extent (75.67%) of need was for capacity building in decision making ability. Most (62%) of the respondents had medium training need for all of the activities while 24% and 14% of them had high and low training need, respectively. Age of the respondents had significant positive relationship while ability to cope with uncertainty and daily time allocation had significant negative relationship with their extent of need for capacity strengthening. The focal problems faced by the women in using the PHAs of guava were lack of training on PHAs, poor transportation and absence of women group in the locality.

Keywords: *Need assessment, capacity building, post harvest activities, guava.*

Introduction

Rural women play a pivotal role in agricultural production and food security in Bangladesh. Owing to 39.52% of total population of the country (BBS, 2008), rural women need to pay attention in making development real. Women produce more than 50% of the food grown worldwide, according to FAO estimation (FAO, 1995). Involvement of women in agriculture increased from 11.4% in 1985-86 to 68.33% in 2005-06. Women's share of total labor in Bangladesh is 10-18% in food grain production and 6-48% in non-cereal crop production (Rahman and Routray, 1998). Rural women put much effort on agricultural activities as aforesaid, they have limited access in economy which is crucial for

making women self reliant. Male populations are contributing 85% in rural economy in 2000 while the female populations are contributing only 6.3% in the same year (CPD, 2004). Women on small-scale farms work in all activities from seed production to harvesting, and also manage grain storage and processing and homestead fruit and vegetable production.

Guava stands sixth in acreage among the most important fruit crops of Bangladesh and can be grown all over the country. The annual production was about 1,51,549 m tons in an area of about 14,885 ha (BBS, 2009). The districts of Barisal, Pirojpur, Jhalokathi, and Chittagong are the main guava producing areas. Fruits like guava are

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most perishable in nature. That is why in spite of growing much of them, add a little to the fruit growers. According to the research findings, among the crop losses, fruit is dominating the top list as 25% of fruits become rotten after harvest while 9% rice incurs post harvest loss in the country (Anonymous, 2008). High perishability of fruits, lack of storage facilities, mechanical injury due to improper handling, packaging, transportation and microbial infection are major causes of post harvest losses in fruits. Postharvest losses in food grains in Bangladesh are reported at an estimated 15%, while in fruits and vegetables they are estimated at 20–25%. For highly perishable fruits and vegetables, these losses may go as high as 40% (CIRDAP, 2009). To prevent incurring such loss post harvest activities (PHAs), capacity building of rural women on PHAs is important. Using sustainable technology in PHAs rural women can produce jam, jelly or pickles from fruits.

This hopefully would be able to cope with post harvest loss and side by side it will help women to have share in rural economy. Unpaid family worker is as high as 71.77% in rural women (BBS, 2008). This women flock is the best resource that can be employed in PHAs. If these women are trained in need based PHAs, they would contribute in increasing total production of crop and as well as turn into income earner women.

The study was carried out with a view to assess the need for capacity strengthening of rural women in performing PHAs of guava; to assess their training need regarding PHAs of guava; to explore the relationships between eleven selected characteristics of the women with their need for capacity building for practicing post harvest activities of guava and to find out the problems faced by the women in using the post harvest facilities in guava production.

Methodology

Kuriana village under Nesarabad upazila of Pirojpur district was purposively selected for the current study. The reason for selecting the site was the abundance and production of guava in that area. A randomly selected sample of 50 rural women involved in guava cultivation was taken for data collection. A pre-tested and structured interview schedule was used to collect data during April 2008. Eleven characteristics of the women were considered as independent variables which were age, education, dependency ratio of the family, farm size, annual family income, organizational participation, decision making capacity in the family, training exposure, credit received, ability to cope with uncertainty and daily time allocation.

Need for capacity strengthening of rural women towards PHAs of guava was the dependent variable of the study. To measure the extent of need for capacity strengthening of women five dimensions of capacity strengthening were included. They were: a) need for financial ability, b) need for decision making ability, c) need for access to support services, d) need for management skill, e) need for physical facilities. 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 five dimensions formed the total score of the extent of need for capacity strengthening of women for a respondent.

Then total score was converted to percent using following formula. The Need Index for Capacity Strengthening (NICS) can mathematically be expressed as follows:

$$\text{NICS} = \frac{N_a}{N_p} \times 100$$

Where,

NICS = Need Index for capacity strengthening

N_a = Actual need

N_p = Possible need

Thus, total score of a subject for this variable could range from 0 to 100, where '0' indicated 'no need' and '100' indicated 'high need' of women for capacity strengthening.

To measure problem of participation in PHAs of guava, Scored Causal Diagrams (SCDs) were used (Galpin *et al.*, 2000). Various problems of participation were listed through discussion with the respondents. Assuming the end problem 'low participation in PHAs' writing it on the ground drawing circle at the center and arrows were drawn to represent the causal relationships between the problems. The causes of those problems were identified and added to the diagram. The problems at the edge of the diagram with no identified 'causes' were determined as the 'root' causes. Scoring was done by the importance from the end problem by dividing them between the causes of each subsequent problem.

Findings and Discussion

Overall Need for Capacity Strengthening of Rural women

The extent of need for capacity strengthening of women was assessed in terms of need index for capacity strengthening (NICS). The NICS values could range from 0 to 100. The observed NICS values ranged from 54.32 to 100. Based on their NICS values the respondents were classified into three categories as shown in Table 1.

Table 1 Distribution of the respondents according to need for capacity strengthening (n=50)

Categories of respondents (score)	Percent	Mean	SD
Low (≤ 33)	0		
Medium (34-67)	24	80.44	13.11
High (> 67)	76		

Presented data showed that most (76%) of the respondents had high extent of need and 24% of them had medium and none of them had low extent of need for capacity strengthening in PHAs of guava. The findings clearly indicate that most of the

respondents had high need for capacity strengthening towards PHAs of guava. It was noticed that there was scarcity of post harvest facilities of guava and their storage facilities were also insufficient. The respondents were not getting appropriate price compared to their cost of production. Thus, the respondents logically felt high need for their capacity strengthening towards PHAs of guava.

Data presented in Table 2 indicate that most of the women fell in high need category for all the dimensions of capacity strengthening. The highest proportion (86%) of the respondents was in high need for management skill. The average need index for capacity strengthening ranged from 75.67 to 83.87. The highest index was for physical facilities and the lowest was for decision making ability. Findings clearly indicate that need for capacity strengthening was about similar for all the components but need for physical facilities like storage facilities was crucial because physical facilities were lacking in the study area.

Table 2 Dimension-wise need for capacity strengthening of women in conducting PHAs of guava

Dimension of need	Observed score range	Respondents		Mean	SD
		Categories	Percent		
Need for financial ability	41.67-100	Low (≤ 33)	0	80.67	19.38
		Medium (34-67)	26		
		High (> 67)	74		
Need for decision making ability	22.22-100	Low (≤ 33)	2	75.67	15.42
		Medium (34-67)	28		
		High (> 67)	70		
Need for access to support services	55.56-100	Low (≤ 33)	0	78.89	12.85
		Medium (34-67)	18		
		High (> 67)	82		
Need for management skill	55.56-100	Low (≤ 33)	0	83.78	12.29
		Medium (34-67)	14		
		High (> 67)	86		
Need for physical facilities	53.33-100	Low (≤ 33)	0	83.87	14.32
		Medium (34-67)	24		
		High (> 67)	76		

Selected Characteristics of the Rural Women and their Extent of Need for Capacity Strengthening

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 need for capacity strengthening towards PHAs of guava. The relationship between the dependent and independent variables has been presented in Table 3.

The computed ' r ' values for age had positively significant relationship whereas ability to cope with uncertainty and daily time allocation for PHAs of guava had negatively significant relationship with their need for capacity strengthening. Hence, the concerned null hypotheses were rejected. Thus, it could be said that age, ability to cope with uncertainty, daily time allocation for PHAs of guava were linked to the extent of need for capacity strengthening towards PHAs of guava.

Table 3 Relationship between dependent and independent variables

Independent variables	' r ' value with 48 df
Age	0.428**
Education	0.045
Dependency ratio of the family	0.157
Farm size	-0.105
Annual family income	-0.119
Organizational participation	0.024
Decision making capacity in the family	0.108
Training exposure	0.039
Credit received	-0.163
Ability to cope with uncertainty	-0.462**
Daily time allocation	-0.497**

** Significant at the 0.01 level

The aged respondents had more experience in guava cultivation but they lacked in technical information regarding different issues of guava cultivation. So, aged women required more capacity strengthening for PHA of guava.

The women who had more ability to cope with uncertainty required less capacity strengthening and vice versa. So, the negative significant relationship was found between ability to cope with uncertainty and need for capacity strengthening of women towards PHAs of guava. Probably, their better ability to cope with uncertainty led them to feel less need for capacity strengthening. The women respondents were involved in PHAs of guava actively. That is why daily time allocation significantly influenced the extent of need of women for capacity strengthening in carrying out PHAs of guava. The women were more involved in PHAs gained more experience and skill in it and thus, felt lesser need for further capacity development in the same area.

Problems in Using up PHAs of Guava

Scored Causal Diagrams (SCDs) were prepared for identifying problems faced by the women in using up the PHAs of guava towards food security. Problems in involving PHAs of guava were discussed with a selected group of respondents, assuming the 'end problem' being 'low involvement in PHAs of guava'. Firstly the problems mentioned by the respondents were listed, secondly diagrams were drawn by them on the plain ground to show causal relationships between the problems, and finally scoring of selected

problems was performed again by them. In this way SCDs was prepared by the group of respondents (Figure 1).

'Lack of training on PHAs' secured the highest score among the 'root' causes followed by 'poor transportation'. It was much rational because lack of training caused less skill and knowledge and resulting in less motivation for PHAs of guava. Due to 'poor transportation' the people of Sharupkathi failed to get appropriate return to production. 'no local women group' was identified as the third most important root cause. Any kind of group is yet to establish in the area working for involving the rural women in post harvest activities of guava. Other root causes of less involvement in PHAs of guava were identified as 'lack of processing material' 'lack of capital' and 'religious barrier'.

Suggested solutions to the 'root' causes

Participants of the selected group occupied in the preparation of Scored Causal Diagram (SCD) were requested to mention possible solutions to the 'root' causes of low involvement in PHAs of guava. The respondents uttered diverse opinions on how these problems could be overcome. The suggestions for the solution of the problems made by the respondent women have been given in Table 6.

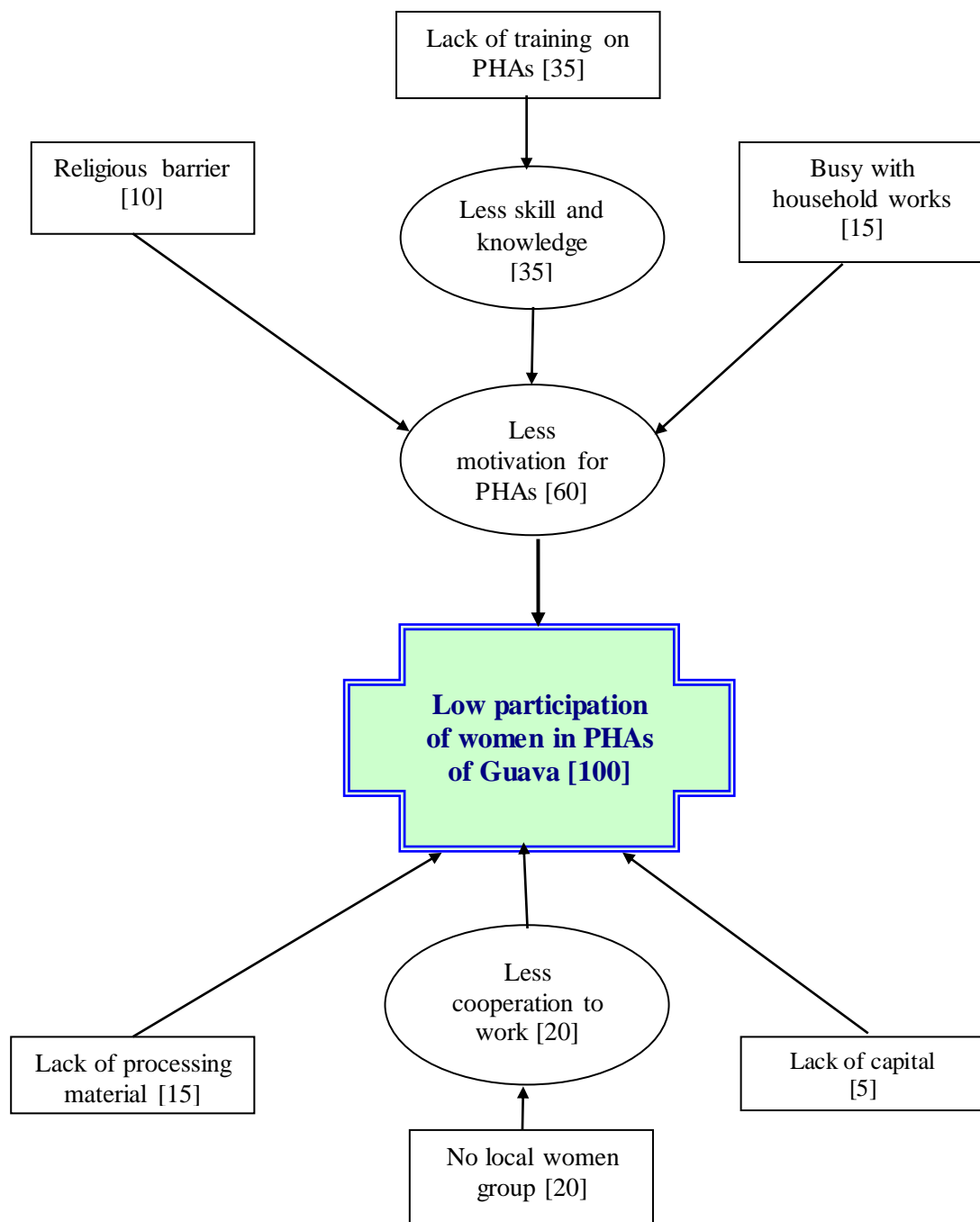


Figure 1. SCDs showing involvement barrier of rural women in PHAs of guava

Table 6 Probable solutions suggested by the respondents with ways to achieve them

Sl. No.	Suggested solutions	Way to achieve
1.	Increased training facilities according to their needs for increasing their knowledge and skill towards PHAs of guava as well as to have efficient manpower.	Collaboration of GOs and NGOs is needed
2.	Increase facilities to preserve guava for long term use to minimize loss of production	GO and NGO and Donor organizations can take proper steps
3.	Road and transportation system should be developed.	GO and Donor organization should go ahead immediately
4.	Involving rural women in different PHAs of guava to increase their operational ability.	Government and private organizations should take initiatives
5.	Establishing processing centers for the rural women to build their capacity in PHAs.	Government can create special programs with the well known NGOs
6.	Emphasizing the necessities of women involvement among the rural people with the help of local leaders and others.	Farmers should be made aware by different communication media
7.	Women group formation with the help of different Go and NGOs.	Government should concern with NGOs and Donor organizations
8.	Increased credit availability according to the need of the rural women regarding PH facilities of Guava.	GOs and NGOs can take proper steps in this matter

The current research revealed that almost one third respondents (76 percent) had high extent of need for capacity strengthening. Rural women with old age, having low ability to cope with uncertainty and spending less time in PHAs should get priority regarding enhancing their capacity strengthening in PHAs. Need based training, better facilities near hand to preserve guava and well developed transport system can improve involvement of women in PHAs in guava as well as can unlock opportunities for

rural women to get their right share in economy. Consequently, proper move should be ensured in order to secure inclusive involvement of the rural women in PHAs. Linkage between GOs, NGOs and donor organization need to be strengthened and need-based system should be developed to ensure supportive involvement of the rural women. The issues that might be dealt with were credit and technical information supply, training and demonstration, motivation campaign and others.

Conclusions

The current research revealed that two-thirds of the respondents (76 percent) had high and nearly one third (24 percent) of them had medium extent of need for capacity strengthening in PHAs of guava. This indicates there is ample scope of providing

training and other supports to the rural women for increasing their capacity. Almost all the respondents of the study showed an overall high to medium need of training on various aspects of PHAs. Appropriate and specific on-the-spot training may be arranged

for the women on various aspects of capacity scale-up to carry out the PHAs of vegetables and fruits. To train the women, extension agents should be trained first to improve 'training of trainers' (TOT) on courses relevant to the PHAs. Such courses might be included in the diploma in agriculture so that the field level officers of DAE can also learn themselves in detail about PHAs of vegetables and fruits.

Furthermore, the relevant academic institutions and capable NGOs may be integrated in the process of strengthening capacities of rural women in performing PHAs in better ways. More nutritional aspects may be included in the courses at

school level so that even less educated women can be aware of the issues.

Rural women with small farm size and less annual income, exposed to uncertainty and having little capital should be given priority regarding enhancing their capacity strengthening in PHAs. Need based training, better facilities near hand to preserve guava and well developed transport system can improve involvement of women in PHAs in guava as well as can unlock opportunities for rural women to get their right share in economy. The key problems faced by the rural women in participating the PHAs of vegetables and fruits are to be resolved on priority basis by concerned agencies of the government.

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