Farmers' Problem Confrontation in Crop Diversification at Southern Region of Bangladesh

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Abstract—*The main purpose of the study was to ascertain the farmers' problem confrontation in crop diversification and to explore the relationship between the selected characteristics of the farmers' and farmers' problem confrontation in crop diversification. Patuakhali is situated the southern region of Bangladesh. The study was conducted in Lohalia union covering four villages of sadar upazila under Patuakhali district. Data were collected from the respondents using a pretested interview schedule during 15ᵗʰ august 2014 to 30ᵗʰ september2014. It was found that the majority proportion of the (43.14) of the farmers had medium confrontation compared to 29.16 percent having high and 27.70 percent had low problem confrontation in crop diversification. Pearson product correlation (r) was used to ascertain the relationships between the concerned dependent and independent variables of the study. findings indicated that among nine selected characteristics of the farmers age, education, farming experience and agricultural knowledge had negative significant relationship farmers' problem confrontation in crop diversification while training experience, farm size, annual income, organizational participation and extension contact had no significant relationship with farmers' problem confrontation in crop diversification.*

1. INTRODUCTION

As an agrarian country agriculture is considered the most important sectors of the economy in Bangladesh. The performance of agriculture sector affects overall economic growth in our country. Around 47.5 percent labour force of country is engaged in agriculture sector and it contributes 19.29% to the Gross Domestic Product (GDP) at current prices [1].Bangladesh is one of the most over populated country in the world. The government of Bangladesh gives emphasis on production of cereal crops, especially rice and wheat for the fulfillment the demand for food, but this over-emphasis on such cereal crops leads to reduce the production of some other minors' crops such as vegetables, pulses, species etc. Realizing the fact the government had taken crop diversification program (CDP) in early 1990's in Bangladesh to increase the production of all cereal crops and to raise the nutritional status as a more balanced diet for the people. Crop diversification is also practiced for reducing farm household's

risk in employment and income. In disaster vulnerable area, agricultural diversification at the farm level helps farmers to reduce their vulnerability. Crop diversification also ensures higher land utilization efficiency and optimization of resource use. Some farmers in the study area have realized these benefits and interested to cultivate various crops through crop diversification. But they confronted many problems in pursuing crop diversification. So this study is designed to making an in-depth analysis the farmers' problem confrontation in crop diversification.

2. METHODOLOGY

The present study was conducted at Lohalia union in Sadar Upazila under Patuakhali district purposively. Out of 9 villages, four villages were selected randomly as the locale of the study. Considering time, money and resources of the researcher the study was kept confined to four villages. The researcher himself with the help of local leaders like chairman, member and SAAO prepared an updated list of all farmers without landless farmers (below .02 ha) of four selected villages. The total number of farmer was 1040, which constituted the population of the study. From this population, 104 farmers (10% of the population) were randomly selected as the sample. A reserve list of 10 farmers was also prepared. The reserve list of the farmers were used only when a farmers in the main list was not available for interview. Appropriate scales and measurement techniques were developed to collect correct responses of the variable from the farmers'. Data were collected from the sample farmer through personal contact by the researcher himself. Collection of data took 45 days from 15ᵗʰ August 2014 to 30ᵗʰ September 2014.

3. RESULT AND DISCUSSION

3.1 Measurement of dependent variable

Farmers' problem confrontation in crop diversification was the dependent variable of the study. Ten major problems were selected for the study after thorough consultation with

supervisors, co-supervisors, farmers and relevant experts. The respondents were asked to four alternatives responses as 'high, 'medium and 'low 'and 'not at all problem' for each of ten selected problems. Scores were assigned to those alternative responses as 3, 2, 1 and 0 respectively. Score for particular problem was measured by Problem Confrontation Index (PCI) as follows:

$PCI = Ph \times 3 + Pm \times 2 + Pl \times 1 + Pn \times 0$

Where,

PCI = Problem Confrontation Index

Ph = No. of respondents confronted high problem

Pm = No. of respondents confronted medium problem

Pl = No. of respondents confronted low problem

Pn = No. of respondents confronted not at all problem

Thus PCI for a particular problem could range from '0' to '312'.

3.2. Farmers' Problem Confrontation in crop diversification

Observed problem confrontation index scores of the problems ranged from was 147 to 251 against the possible range of 0 to 312. The average score was 20.76, the standard deviation was 2.23. On the basis of observed scores, confronted problems were classified into three categories such as low problems (147-182), medium problems (182-217) and high problems (218-251). Distribution of problems according to problem confrontation index score is presented in table no1.

Table 1: Farmers' Problem Confrontation in Crop Diversification

Categories	Percent	Mean	Standard Deviation
Low Medium High	27.70 43.14 29.16	20.76	2.23

The data revealed that, highest proportion (43.14 percent) of the respondents confronted medium problems compared to 29.16 percent confronted high problems and 27.70 percent confronted low problems. Problems confronted by the farmers in pursuing crop diversification with their problem confrontation index and rank order were shown in table no 2.

Table 2: Problems with Problem Confrontation Index

Problems	PCI	Rank Order
Lack of knowledge about crop diversification	251	1
Lack of knowledge about the production technology of various crops	248	2
Lack of skill labor	243	3
Decreasing of crops price	226	4

High price of farm inputs (Seeds, fertilizer etc).	220	5
Infestation of insects and diseases	208	6
Marketing problems of crops	200	7
Scarcity of HYV seed in time	194	8
Lack of adequate credit	188	9
Scarcity of irrigation water	147	10

The rank order of confronted problems according to their problem confrontation index is shown in Fig. 1
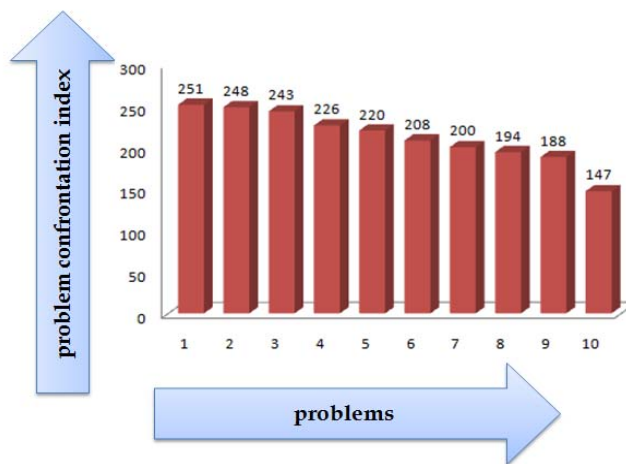

Fig. 1: Comparative Problem Confrontations in Crop Diversification

3.3 Characteristics of the Respondents

According to the objectives of the study, data were collected from a sample of 104 respondents. The selected characteristics of the farmers included their age, education, training experience, farming experience, farm size, annual income, organizational participation, extension contact, and agricultural knowledge.

Age

The observed age scores of the farmers ranged from 25 to 75 with a mean of 48.19 and a standard deviation of 10.32. The highest proportion (44.23 percent) of the farmers fell in the "middle aged" category while 17.31percent of them fell in the "young aged" category and 38.46 percent fell in the "old aged" category. The age of the rural youth had significant negative relationship with Problem confrontation in selected agricultural production activities [3].

Education

The education scores of the farmers ranged from 0 to 11 with a mean of 5.26 and a standard deviation of 3.59. The majority (41.34 percent) of the farmers had primary level of education compared to 24.05 of them having secondary level education,1.92 percent had above secondary level education and 32.69 percent of the farmers were illiterate. The education

of the farmers had negative significant relationship with farmers' problem confrontation of the farmers in vegetable cultivation [2].

Farming experience

Farming experience scores of the farmers ranged from 8 to 50 with a mean of 25.18 and a standard deviation of 9.23.The majority (45.20 percent) of the farmer's fell into Medium experience category compared to 38.46 percent of them having Low experience and 16.34 percent in High experience category.

Training experience

The training experience scores of the farmers ranged from 0 to 3 with the mean and standard deviation being .45 and .68 respectively. The majority (63.50 percent) of the farmers had no training experience while the rest 36.50 percent farmers had training experience in the study area.

Farm size

The observed age scores of the farmers ranged from 0.14 to 3.15 with a mean of 0.91 and a standard deviation of 0.84. The highest proportion (49.03) percent of the farmers had small farms while 11.53 percent had marginal farms, 29.80 percent farmers had medium farms and 7.69 percent had large farms. The Farm size had no relationship with problem confrontation in selected agricultural production activities [3].

Annual Income

The annual family income scores of the farmers ranged from 101.77 to 296 with a mean of 188.40 and standard deviation of 46.73. The highest proportion (50.96 percent) of the farmers had Medium income compared to 31.73 percent had Low income, and 17.30 percent in high income category.

Organizational participation

The observed organizational participation scores of the respondents ranged from 0 to 12 with an average of 2.57 and a standard deviation of 3.17**.**The majority (45.19 percent) of the farmers had no organizational participation, while 27.80 percent had low, 24.03 percent had medium and only 2.8 percent had high organizational participation in the study area.

Extension Contact

The extension contact scores of the farmers ranged from 18 to 42 with the mean and standard deviation were 30.73 and 4.60 respectively. Highest proportion (58.65 percent) of the farmers in the study area had medium extension contact, while 26.92 percent had low extension contact and 14.42 percent had high extension contact.

Agricultural Knowledge

The agricultural knowledge scores of the farmers ranged from 10 to 34 with a mean of 18.56 and standard deviation of 5.15.

Data indicated that majority (46.15 percent) of the farmers fell into medium knowledge while 39.42 percent in low knowledge category and 14.43percent in high knowledge category. The agricultural knowledge showed negative significant relationship with farmers' problem confrontation of the farmers in vegetable cultivation.

Salient Features of selected Farmers' Characteristics are shown in table no.3

Table 3: The Salient Features of Farmers' Characteristics

Characteristics	Categories	Farmers	
		Number	Percent
Age	Young Middle Old	18 46 40	17.31 44.23 38.46
Education	Illiterate Primary Secondary Above Secondary	34 43 25 2	32.69 41.34 24.05 1.92
Farming experience	Low Medium High	40 47 17	38.46 45.20 16.34
Training experience	No Training experience	66 38	63.50 36.50
Farm size	Marginal Small Medium Large	12 51 31 8	11.53 49.03 29.80 7.69
Annual income	Low Medium High	33 53 18	31.73 50.96 17.30
Organizational participation	No Low Medium High	47 29 25 3	45.19 27.80 24.03 2.8
Extension Contact	Low Medium High	28 61 15	26.92 58.65 14.42
Agricultural knowledge	Low Medium High	41 48 15	39.42 46.15 14.43

3.4. Relationships between the Dependent and Independent Variables

Coefficient of correlation was computed in order to explore the relationships between the selected characteristics of the farmer and farmers' problem confrontation in crop diversification. The relationship between the selected characteristics of the farmer and farmers' problem confrontation in crop diversification has been presented in Table 4. Out of 9 selected characteristics of the farmers, age, education, farming experience and agricultural knowledge had negative significant relationship with farmers' problem confrontation while training experience, farm size, annual income and extension contact had no significant relationship with farmers' problem confrontation.

Table 4: Relationship between Dependent and Independent Variables

Dependent variable	Independent variable	Correlation co-efficient (r value)
Farmers' problem confrontation in	Age	-.199[*]
	Education	-.497[**]
	Farming Experience	-.227[*]

crop diversification	Training Experience	-.111
	Farm Size	-.086
	Annual Income	-.079
	Organizational Participation	-.067
	Extension Contact	-.128
	Agricultural Knowledge	-.397[**]

*significant at 0.05 level of probability (0.198 with 102)

**significant at 0.05 level of probability (0.198 with 102)

NS=not significant

4. CONCLUSION

The researcher observed the farmers' problem confrontation in crop diversification in the study area and gave the conclusions on the basis of findings and its logical interpretations. Most of the farmers (43.14 percent) in the study area confronted medium problem in pursuing crop diversification. It is quite logical that most of the farmers had medium extension contact and medium agricultural knowledge. So majority of the farmers in the study area confronted medium problem in pursuing crop diversification. The relevant organization such as DAE, NGOs and other private organizations should take necessary action to increase the farmer's knowledge on crop diversification in the study area. The concerned authority should also take motivational programs for the farmers and give them some solution about their confronted problems in crop diversification . Therefore, medium problem would convert low problems and farmers would interest in practicing crop diversification widely.

5. ACKNOWLEDGEMENTS

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