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PROBLEMS FACED BY THE BEAN FARMER IN SELECTED AREAS OF PABNA DISTRICT IN BANGLADESH

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ABSTRACT

The major purposes of the study were to determine the extent of the problem faced by the farmers in bean cultivation and to explore the relationships between bean farmers' selected characteristics with their problem faced. The study was conducted in four villages of two unions under Atghoria upazilla of Pabna District. Data were collected from a random sample of 106 bean farmers by using an interview schedule during 15 Dec, 2017 to 15 Jan, 2018. The highest proportion (71.70 percent) of the farmers faced medium overall problem in bean production, while 16.04 percent faced high and 12.26 percent faced low problem. Problem faced in non-availability of pesticides ranked 1st and this was followed by non-availability of fertilizers, lack of capital so on and least one lack of irrigation in bean cultivation ranked 28th. Correlation analysis indicated that education, training exposure, organizational participation, extension media contact and farmers' knowledge had significant negative relationship with their problem faced. Age had significant positive relationship with their problem faced while family members, farm size, annual family income, bean cultivation area, and credit received by the farmers had no significant relationship with their problem faced. Overwhelming (87.74) majority of bean farmers faced medium to high problems therefore, it may be said that problem faced by the farmers in bean cultivation is a serious issue to be addressed to maximize bean production.

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INTRODUCTION

Bangladesh is an agriculture based country. The growth and stability of the economy depends largely on the growth of agriculture. Agriculture sector contributes about 17 percent to the country`s Gross Domestic Product (GDP) and employs more than 45 percent of total labor forces (BBS 2013).The agriculture sector comprises crops, livestock, forestry and fisheries while approximately 8.99 percent of the GDP was derived from crops and horticulture (BBS 2013).Of the total 13.3 million hectares of arable land in the country, only 6.73 percent is under horticultural crop. If potato and spices are excluded, the area comes down to 3.22 percent only (Hossain 2004). But now-a-day's commercial production of vegetables is becoming popular among some of the farmers.

Among the vegetables beans are important parts. They are different shapes sizes and colors, are versatile and amazingly convenient because they can be dried and stored for years. Beans can be eaten raw, sprouted or cooked, ground into flour. The beans contain calories 131.98 (k cal/100g), carbohydrates 23.72g, protein 8.84g, fat 0.52g, vitamins 6.86mg, mineral 596.99mg, water 65.7g per 100g of beans (USDA 2012).The beans are lowest in fats, oils and sugars. Most beans contain only 2-3 percent fat. They are the perfect food for a fat-restricted diet. It contains no cholesterol, and they can help lower your cholesterol level because they are one of the richest sources of fiber. Most beans contain at least 20 percent protein and are high in carbohydrate which provides long lasting energy (USDA 2012). In Bangladesh beans are cultivated in about 18230.36 ha of lands with production of 110116 metric tons (BBS 2014). A large number of farmers in Pabna districts are now engaged in commercial bean cultivation as the profitable farming has changed the lives of many people in the region. The bean farming area of pabna districts are 445.34 ha and its productions are 1651 metric tons (BBS 2014).

Thousands of farmers in different upazilas of Pabna district are now engaged in bean cultivation as it proved profitable, and farming of it has changed the lots of farmers in the area (DAE, 14). According to sources, some 60-70 trucks loaded with beans leave 'Muladuli bean zone' in Iswardi upazila of the district, the biggest bean-producing for capital Dhaka and other parts of the country everyday as beans worth around Tk 1 crore are traded daily at the local market (DAE), and more than 1.5 lakh families have been engaged in bean cultivation for the last several years, and its business in the region seems to be more profitable than other cultivation. Bean farmers from Pabna and Natore districts take their products to Muladuli market and sell it to wholesalers who supply it to different places including Dhaka, Chittagong, Sylhet and Narayanganj. Farmers from all the villages of Muladuli union under Ishwardi upazila, Khidirpur, Per Khidirpur and Ramchandrapur unions of Atghoriaupazila and Zednail, Haripur and adjoining villages of Chatmoharupazila under Pabna district bring their product to the market for sale. But none of businessmen came from Dhaka and other parts to the market for buying beans. As a result a big amount of beans returned to the local market and selling at very minimum prices. At least 3,000 hectares of land have been brought under bean cultivation in the district this year while it was around 2,200 hectares last year. This year beans have been produced on over 6,000 hectares of land (DAE, 14).

For getting the improved practices adopted by the farmers in bean cultivation, at least two things are necessary. Firstly, the bean farmers must be aware of the benefits of the vegetables as well as the bean cultivation and secondly, the bean farmers should not face difficulty in obtaining necessary conditions and services to adopt the improved practices for bean cultivation. Generally bean farmers confront many problems during bean cultivation. In general, problem refers to some difficulties when a bean farmers experiences from practical situation and wants to get a solution for the same. So long the problem confrontation, researchers used to find out problems with degree of severity as perceived by the concerned respondents. But the researcher of this study had a research design to describe how each of the problems was tackled by them during bean cultivation. Pabna district is a suitable place for bean cultivation and there are a significant number of bean farmers and they confront different problems in bean cultivation. But limited effort has been made to undertake systematic investigation in this respect. It is, therefore, important and essential to have clear and good understanding on problems faced by the farmers in bean cultivation at field level. The specific objectives were: i). to determine the extent of problems faced by the farmers in bean cultivation. ii). to determine and describe some selected characteristics of the bean farmers. iii). to explore the relationships between the selected characteristics of the bean farmers and their extent of problem facing in bean cultivation. iv). to determine the severity among the problems faced by the farmers in bean cultivation.

METHODOLOGY

The study was conducted in four villages under Atgharia upazilla of Pabna district. An update list of 972 bean farmers was prepared with the help of Upazila Agriculture Officer of these localities. Out of 972 total population 106 bean farmers were selected randomly considering the Yamane's (1967) formula. Thus, 106 bean farmers constituted the sample of the study for conducting interviews. Farmers were asked to furnish information about their age, education, family size, farm size, annual income, bean cultivation area, training exposure, extension media contact, bean cultivation knowledge and credit received.

To measure the problems faced by the bean farmers' twenty eight (28) items were incorporated in the interview schedule. A four (4) points rating scale viz. not at all, low, medium and high were employed against each of the twenty eight (28) items and a score of 0, 1, 2, and 3 were assigned against the items respectively. The problems faced by the bean farmers were determined by adding the scores obtained by the farmers against twenty eight (28) items. Thus the problems faced score of the farmers could range from 0-84. Based on the obtained score, the farmers were classified into three categories such as low problem faced, medium problem faced and high problem faced categories.

Thus the primary data were collected between 15 Dec, 17 to 15 jan, 18 through focused group discussion (FGD) and face to face interviews. Some related literature and empiricalfindings were also collected and reviewed from various secondary sources to support and supplements the results of this study. Last of all, collected data were edited and compiled in order to make suitable for analysis. Statistical treatments such as percent, mean, standard deviation, range and frequency was done. The Pearsons Product Moment Co-efficient of Correlation was computed to explore the relationships of the selected factors of the study using SPSS (Statistical Package for Social Science) software package (version 20). Five percent and one percent level of probability were used in the present study.

RESULT AND DISCUSSION

Personal profile of the respondent farmers

Large portion (41.51%) of the farmers were middle aged group while 37.74 percent and 20.75 percent farmers fell in the young and old aged category respectively with an average of 41.27 years. Majority of the farmers (37.74 %) had secondary level of education followed by can sigh only (32.08%). A few of (12.26%) the farmers had primary education and 6.60 percent farmers had above secondary level with 11.32 percent of illiterate farmers. However, average literacy of the respondents was below primary level of education. About half of (47.17 %) farmers maintained medium family compare to small sized (36.79%) while only 16.04 percent had large family with an average of 5.58. The farm size score ranged from 0.18 to 4.11 hectares with the average being 0.92 hectare. Among the respondents 67.92 percent were small farmers while 29.25 farmers were medium farmers, 1.89 percent of the farmers were large and only 0.94 percent of the farmers were marginal.Farmers'annual income ranged from 44 to 1150 thousands with an average of 193.32 thousands. Among the farmers 61.34% were in medium income group followed by low (33.02%) income and high (5.64%) income group. Bean area of the farmers ranged from 0.07 to .067 hectare with an average of 0.22 hectare of lands. Among the respondents 75.47 percent of the bean farmers had medium bean area followed by large (13.21%) and small (11.32%). Training exposure of the bean farmers ranged from 0-18 with an average of 5.59 days. Majority of the bean farmers (47.17%) had low training followed by no training 35.85 percent and medium training 16.98 percent. Organizational participation of the farmers ranged from 0 to 15 with an average of 4.98. About half (42.45%) of the bean farmers had low organizational participation, 37.74 percent had no and 19.81 percent bean farmers had medium organizational participation. Extension media contact of the bean farmers ranged from 8-32 with an average of 18.38. Most of the respondents (73.59%) had medium extension media contact, 14.15 had low and 12.26 had high extension media contact. Knowledge level of the bean farmers ranged from 12-27 with an average of 19.19. Majority (82.08%) of the bean farmers had medium level of knowledge while 12.26 percent had high and only 5.66 percent of bean farmers had low level of knowledge. According to the table no 2 credit receive of the bean farmers ranged from 0 to 60 thousands with an average of 20.08 thousands. Forty percent farmers did not receive credit while 33.02% had received medium credit, 24.53% had low and 1.88% of farmers had received high credit.

Table 1. Distribution of the respondents on the basis of selected characteristics

Characteristics	Scoring method	Categories	Percent	Range	Mean	SD
Age	Years	Young (up to 35) Middle (>36-50) Old (above 50)	37.74 41.51 20.75	21-70	41.27	11.16
Education	Years of schooling	Illiterate (cannot read and write) Can sign only (0.5) Primary (1-5) Secondary (6-10) Above secondary	11.32 32.08 12.26 37.74 6.60	0-15	4.47	4.14
Family size	No. of persons	Small family (Up to 4) Medium family (5-7) Large family (above 7)	36.79 47.17 16.04	2-14	5.58	2.22
Farm size	Hectare	Landless farm (< 0.2) Small farm (0.201-.99 Medium farm (1-3) Large farm (above 3)	0.94 67.92 29.25 1.89	0.18-4.11	0.92	0.62
Annual income	(000) Taka	Low income (up to 120) Medium income (> 120-240) High income (above 240)	33.02 61.34 5.64	44-1150	193.32	149.06
Bean area	Hectare	Small (up to 0.1) Medium (0.1- 0.35) Large (above 0.35)	11.32 75.47 13.21	0.07-0.67	0.22	0.12
Training exposure	Days	No training (0) Low training (up to 10) Medium training (above 10)	35.85 47.17 16.98	0-18	5.59	5.25
Organizational participation	days	No participation (0) Low participation (up to 8) Medium participation (above 8)	37.74 42.45 19.81	0-15	4.98	4.64
Extension media contact	scores	Low (up to 14) Medium (> 14-22) High (above 22)	14.15 73.59 12.26	8-32	18.38	3.97
Knowledge	Scores	Low (up to 15) Medium (15-22) High (above 22)	5.66 82.08 12.26	12-27	19.19	2.76
Credit received	(000) taka	No Low (up to 30) Medium (> 30-50) High (above 50)	40.57 24.53 33.02 1.88	0-60	20.08	19.21

Problems Faced by the Farmers in Bean Cultivation

Problem faced by the bean farmers was the dependent variable of this study. Problem faced by the bean farmers was measured by computing problems faced scores according to extent of implementing problems faced to cope with each of 11 selected items in bean cultivation. Problem faced by the bean farmers range from 25 to 72 against the possible range of 0 to 84 with the mean and standard deviation of 48.35 and 9.09 respectively. On the basis of scores of problem faced by the bean farmers, the respondents were classified into three categories namely, low, medium and 'high problem faced. The distribution of the respondents according to problem faced by the bean farmers under the study is given in Table 2.

Table 2. Distribution of the farmers according to problems faced in Bean cultivation

Categories (scores)	Respondents farmers		Mean	Standard deviation
	Number	Percent (%)		
Low problem (up to 39)	13	12.26	48.35	9.09
Medium problem (>39-57)	76	71.70		
High problem (above 57)	17	16.04		
Total	106	100		

Table 2 indicates that among the respondents the highest (71.70) percent bean farmers belongs to the group of medium problem faced category and the lowest percent (12.26) in low problem faced category followed by high problem faced category (16.04 percent). Among the respondent most of the respondent bean farmers confront their problem using their long experience and knowledge gathered from day to day practices in bean cultivation.

Comparative severity among the problems faced by the farmers in bean cultivation

The observed problem faced score ranged from 122 to 237 against the possible range of 0-318. Problem Faced Index (PFI) of the selected problems is shown in Table 3.

On the basis of PFI, it was observed that "non availability of pesticides" ranked first followed by "Non-availability of fertilizers", "lack of capital", "difficulty in getting loan" " farmers do not get proper price", " insect and pest attack", " high price of fertilizers and pesticides", "susceptible to disease", "lack of contact by the extension workers", "malpractices in the market", "lack of storage facilities", "inability to reading and writing", "lack of good packaging system", poor radio and television system", "non availability of disease resistant variety", "adverse climatic condition", "long chain of middlemen", "deficient knowledge about optimum dozes of fertilizers and pesticides", "high cost of transportation", "late supply of modern variety", "incompatible broadcasting period", "lack of skilled labor", "electricity problem", "lack of suitable transportation", "lack of awareness of farmers", "complexity in information", "damages during transporting", and "lack of irrigation in bean cultivation.

Table 3. Problem Faced Index (PFI) with Rank Order

Problems	Numbers of farmers				PFI	Rank order
	High problem	Medium problem	Low problem	Problem not at all		
Unavailability of pesticides	41	51	12	2	237	1
Non-availability of fertilizers	39	54	11	2	236	2
Lack of capital	36	46	23	1	223	3
Difficulty in getting loan	32	51	19	4	217	4
Farmers do get not proper price	14	73	19	0	207	5
Insect and pest attack	30	43	26	7	202	6
High price of fertilizers and pesticides	26	45	33	2	201	7
Susceptible to disease	22	51	28	5	196	8.5
Lack of contact by the extension workers	10	73	20	3	196	8.5
Malpractices in the market	15	64	22	5	195	10
Lack of storage facilities	17	58	25	6	192	11
Inability to reading and writing	12	61	32	1	190	12
Lack of good packaging system	17	52	31	6	186	13.5
Poor radio and television system	17	50	35	4	186	13.5
Non availability of disease resistant variety	16	51	34	5	184	15
Adverse climatic condition	14	45	41	6	173	16
Long chain of middlemen	16	41	41	8	171	17
Deficient knowledge about optimum dozes of fertilizers and pesticides	13	44	43	6	170	18
High cost of transportation	14	41	42	9	166	19
Late supply of modern variety	9	48	42	7	165	20
Incompatible broadcasting period	11	40	51	4	164	21.5
Lack of skilled labor	11	43	45	7	164	21.5
Electricity problem	6	53	38	9	162	23
Lack of suitable transportation	6	39	55	6	151	24
Lack of awareness of farmers	7	44	41	14	150	25
Complexity in information	7	38	52	9		26
Damages during transporting	10	35	41	20	141	27
Lack of irrigation in bean cultivation	11	26	37	32	122	28

Relationship between the Selected Characteristics of the Farmers and their Problems Faced in Bean Cultivation

Relationships of eleven selected characteristics (age, education, family size, farm size, annual income, bean area, training exposure, organizational participation, extension media contact, knowledge and credit receive) of the farmers with their problem faced in bean cultivation have been shown in table 4.

Table 4. Pearson's product moment co-efficient of correlation showing relationship between dependent and independent variables

Dependent variables	Independents variables	Tabulated value		Value of coefficient correlation with 104 d. f
		0.05	0.01	
Problems faced by the farmers in bean cultivation	Age	0.192	0.251	0.399**
	Education			- 0.213*
	Family members			0.156
	Farm size			0.019
	Annual family income			0.015
	Bean cultivation area			0.074
	Training exposure			- 0.554**
	Organizational participation			-0.509**
	Extension media contact			-0.226*
	Farmers knowledge			-0.257**
	Credit received			-0.027

* = Significant at 0.05 level of probability; ** = Significant at 0.01 level of probability

Data presented in Table 4 shows a significant negative relationship between the education level and problem faced by the bean farmers. Similar relationship was observed by haque (2001). There exist a non significant positive relationship between family size and problem faced by the bean farmers. Similar relationship was also observed by Nahid (2005) between family size of the sugarcane growers and their problem confrontation in sugarcane production. According to the table 4 training exposure show a significant negative relationship with the problem faced by the farmers.Basher (2006) found the similar relationship with their problem confrontation in mashroom cultivation. A negative significant relationship was observed between organizational participation and problem faced by the bean farmers. Rahman (2006) also found that organizational participation of the farmers had significant negative relationship with their constraints faced in Banana cultivation of SunargaonUpazilla under Narayangonj district. There exist a significant negative relationship between extension media contact and problem faced. Akanda (1993) in his study also found that extension contact of exerted significant negative influence on their faced constraints in cultivation. Knowledge of the bean farmers show a significant negative relationship with the problem faced. Aziz (2006) found the simillar relationship with their constraints faced in potato cultivation in Jhikargachaupazilla under Jessore district.

CONCLUSION AND RECOMMENDATION

Overwhelming (87.74%) majority of bean farmers faced medium to high problem therefore, it may be concluded that problem faced by the farmers in bean cultivation is a serious issue to be addressed to maximize bean production. Most of the farmers' addressed their problems using their long experience and knowledge gathered from day to day practices in bean cultivation. Majority of the farmers were young to middle aged and relationship between age and problems faced by the bean farmers were found significant. Therefore, it can be concluded that young and middle aged bean farmers faced less problem than the old

farmers. Education level, training exposure, organizational participation, extension media contact and knowledge showed significant negative relationship. Therefore, these characteristics should be given priority to improve so that they can reduce their faced problem. It can be ensure by taking necessary actions by DAE and other concerned authorities. Actions may be mass education, training and motivational program, increase extension contact through individual, group and mass media to increase farmers' knowledge and awareness about bean cultivation and relevant issues.

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