J. Sci. Technol. (Dinajpur) Vol. 8: 53-58 (2010)
ISSN 1994-0386

FARMERS' ATTITUDE TOWARDS WINTER VEGETABLES CULTIVATION FOR THEIR SUSTAINABLE LIVELIHOOD IMPROVEMENT

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ABSTRACT

The main objective of the study was to determine the level of attitude of the farmers towards winter vegetables cultivation. Data for the study were collected from a sample of randomly selected 100 farmers through personal interview during 10 to 30 October 2008. The findings revealed that majority (67%) of the farmers had moderately favorable attitude towards vegetables cultivation followed by 26% slightly favorable while only 7% had highly favorable attitude towards vegetables cultivation. Among ten (10) characteristics of the farmers, four namely education, family income, cosmopoliteness and knowledge on vegetable production showed positive and significant relationship with their attitude towards vegetable cultivation. On the contrary, age, family size, farm size, training exposure, organizational participation and extension media contact did not show significant relationships with the same regard. In addition, the top three problems confrontations in rank order were: i) high price of good vegetables seed, ii) Lack of advice on vegetable cultivation, and iii) low price of vegetable in harvesting time.

Key words: *Attitude, vegetables cultivation, sustainable livelihood*

INTRODUCTION

Vegetables are the important sources of vitamins and minerals. More than 40 different kinds of vegetables are grown in Bangladesh. But vegetables production in the country is far below the requirement. The total cultivable land is around 8.23 million hectares having a cropping intensity of 197 percent, while vegetables including potato and sweet potato occupy only 4.3 percent. This is because, farmers, from traditional point of view, are specially inclined to produce rice for their consumption and selling purpose. The daily vegetables consumption of developed country is about 400–500 g/head. The daily vegetable consumption is very low in Bangladesh in comparison with some other Asian countries (AIS, 2009).

In addition, vegetable has a significant value as a source of income. It can be easily grown in homestead or roadside fallow land at a low cost of production. But vegetable is not yet accepted as an income-earning crop at the farmers' level. So, it is necessary to increase the production of vegetables.

Sustainable livelihood comprises of the assets such as human capital, social capital, natural capital, physical capital and financial capital. A livelihood is sustainable when it can maintain or enhance its capabilities and assets both now and in the future (DFID, 2001). Increased income of vegetables cultivation can play a vital role for sustainable livelihood improvement by maintaining livelihood assets such as the human capital through better health status and education; social capital by means of active participation in external activities; natural capital through better management of natural resources; physical capital by providing good shelter, pure water, power etc and financial capital through extending the scope of saving.

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It is assumed that creating awareness towards vegetables cultivation and its increasing production can play a significant role in meeting daily diet as well as improving the economic condition of the farmers. In view of the foregoing discussions, the researcher conducted the study entitled "Farmers' Attitude towards Winter Vegetables Cultivation for their Sustainable Livelihood Improvement". The specific objectives of the study were:

a) To determine the level of attitude of farmers towards vegetables cultivation.
b) To explore the relationship between attitude of the farmers and their selected characteristics.
c) To ascertain problem confrontation of the farmers in vegetables cultivation.

MATERIALS AND METHODS

The study was conducted in four villages of Aluyari union under Fhulbari upazila of Dinnajpur district. The total population consisted of 543 farmers in the study area. But, 100 respondents were selected for interview by random number. Data were collected from the sampled respondents through personal interview. Ten characteristics of the farmers namely age, education, family size, farm size, family income, cosmopoliteness, training exposure, organizational participation, extension media contact and knowledge on vegetables production constituted the independent variables. These independent variables were measured by following appropriate measurement procedures. Attitude towards vegetables cultivation was the dependent variable of the study. For the measurement of attitude, the attitude scale was developed by using Likert (1932) method of summated ratings. Seven positive and eight negative statements were carefully constructed to develop the scale. A respondent was asked to give his opinion about each of the positive and negative statements along with a five point scaling (strongly agree, agree, no opinion, disagree and strongly disagree) and corresponding scores were 5,4,3,2, and 1 respectively. The scores were reversed for the negative statements. The attitude scale could range from 15 to 75 where 15 indicate slightly favorable and 75 indicate highly favorable attitude. An Attitude Index (AI) was computed by using the following formulae for the determination of rank order of the statements:

For positive statement, $AI = (A_{sa}x5) + (A_{a}x4) + (A_{no}x3) + (A_{d}x2) + (A_{sd}x1)$

For negative statement, $AI = (A_{sa}x1) + (A_{a}x2) + (A_{no}x3) + (A_{d}x4) + (A_{sd}x5)$

Where, AI= Attitude Index

A_{sa}=Percent of farmers with the opinion of strongly agree

A_{a}= Percent of farmers with the opinion of agree

A_{no}= Percent of farmers with no opinion

A_{d} = Percent of farmers with the opinion of disagree

A_{sd}= Percent of farmers with the opinion of strongly disagree

The SPSS (Statistical Package for Social Sciences) computer program was used to perform data analysis. Throughout the study, at least five percent (0.05) level of probability was used as a basis of rejecting the null hypothesis.

RESULTS AND DISCUSSION

Farmers' characteristics

Findings revealed in the Table 1 that majority (97%) of the farmers were young to middle-aged. More than half (55%) of the farmers had education at primary level. Majority (62%) farmers had medium to large family size followed by 38 % small. More than three-fourths (86%) of the farmers had marginal to small farm size followed 14% landless. No medium and large farm size farmers were found in the study area. A big proportion (81%) of farmers had low to medium family income. More than half (57%) of the farmers had medium cosmopoliteness followed by 36% low. Majority (64%) of the farmers received short and mid-term training while only 7% had long-term training exposure. More than three-fourths (77%) of the farmers had low organizational participation followed by 7% high. Major part (49%) of the farmers had low contact with extension media. More than two-thirds (72%) of the farmers had high knowledge and only 4% had low knowledge on vegetables cultivation.

Table 1. Characteristics profile of the farmers (N = 100)

Characteristics (Measuring units)	Range		Farmers			Mean	Std. Dev.
	Possible	Observed	Categories	No.	%		
Age (Year)	Unknown	22-46	Young (up to 30)	64	64	29.77	6.300
			Mid-aged (31-45)	33	33		
			Old aged (> 45)	3	3		
Education (Year of schooling)	Unknown	0-12	Illiterate (0)	19	19	4.54	3.392
			Primary level (1-5)	55	55		
			Secondary level (6-10)	19	19		
			Above SSC (>10)	7	7		
Family size (Number)	Unknown	1-10	Small (up to 4)	38	38	6.05	2.307
			Medium (5-8)	24	24		
			Large (> 8)	38	38		
Farm size (Hectare)	Unknown	0.01-0.63	Landless (≤ 0.02)	14	14	0.225	0.194
			Marginal(.021- .2)	46	46		
			Small (0.21-1.0)	40	40		
Family income ('000' Tk)	Unknown	16-130	Low (up to 30)	40	40	42.09	24.308
			Medium (31-50)	41	41		
			High (>50)	19	19		
Cosmopoliteness (Score)	0-21	1-15	Low (up to 7)	36	36	8.82	3.786
			Medium (8-13)	57	57		
			High (>13)	7	7		
Training exposure (Day)	Unknown	0-180	No training (0)	29	29	5.64	18.025
			Short-term (1-5)	37	37		
			Mid-term (6-14)	27	27		
			Long-term(>14)	7	7		
Organizational participation (Year)	0-30	0-10	Low (up to 1)	77	77	1.24	2.109
			Medium (2-6)	16	16		
			High (> 6)	7	7		
Extension media contact (Score)	0-70	11-49	Low (up to 25)	44	44	27.78	11.932
			Medium (26-40)	49	49		
			High (>40)	7	7		
Knowledge on vegetables production (Score)	0-30	10-30	Low (up to 14)	4	4	23.59	5.294
			Medium (15-28)	24	24		
			High(> 28)	72	72		

Farmers' attitude towards vegetables cultivation

Data contained in Table 2 indicate that observed attitude scores of the farmers towards vegetables cultivation ranged from 19 to 61 against the possible score of 15 to 75 with the mean value 31.54 having standard deviation 9.416. Based on their attitude towards vegetables cultivation, the respondents were classified into three categories such as slightly favorable, moderately favorable and highly favorable. Majority (67%) of the farmers had moderately favorable attitude towards vegetables cultivation followed by 26% slightly favorable and only 7% had highly favorable attitude. Thus, it could be said that more than two-third (74%) of the farmers had moderately to highly favorable attitude towards vegetable cultivation and it contributes to the improvement of farmers' income as well as livelihood status of those farm families. On the otherhand, one-fourth (26%) farmers expressed slightly attitude with the same regard. It meant that there was ample scope in the study area for motivating and creating awareness among the farmers towards vegetables production so that the livelihood status of the farm families become sustainable.

Table 2. Distribution of the farmers according to their attitude towards vegetables cultivation

Categories (Score)	Range		Farmers		Mean	Std. Dev.
	Possible score	Observed score	Number	%		
Slightly favorable (up to 25)	15-75	19-61	26	26	31.54	9.416
Moderately favorable (21-50)			67	67		
Highly favorable (above 50)			7	7		
Total			100	100		

Rank order of the statements according to the percentages of attitude indices

A critical examination of data contained in Table 3 show that among the statements 'vegetables are essential for good health so we consume it everyday' (92.8%) emerged as first rank order by the farmers' opinion. It meant that farmers of the study area were aware of the nutritional importance of vegetables but they could not get enough due to inadequate production of vegetables. 'I don't carry vegetables in market because it hampers social status (89.2%)' was ranked second because farmers still think that selling of vegetables in market is a non-prestigious task. The statement

Table 3. Rank order of the statements according to the attitude indices

Sl. No.	Statements	Extent of opinion					% of Attitude Indices (AI)	Rank order
		Strongly agree	Agree	No opinion	Disagree	Strongly disagree		
1 (+)	Vegetables are essential for good health so we consume it everyday	70	25	4	1	0	92.8	1
2 (-)	I don't carry vegetables in market because it hampers social status.	0	3	7	31	59	89.2	2
3 (-)	Although there are adequate transport facilities, I sell vegetables to whole seller in the field.	0	8	2	42	48	86.0	3
4 (+)	I am not interested in vegetables cultivation due to low price in harvesting period.	42	38	3	12	5	80.0	4
5 (-)	It is sufficient to take vegetable, so I consume a very little everyday.	3	9	5	58	25	78.6	5
6 (-)	Preparation of vegetables field needs minimum tillage so cost of production is low.	8	4	22	30	36	76.4	6
7 (+)	Homestead vegetables cultivation not only meets the daily diet but also a source of income.	21	57	3	17	2	75.6	7
8 (-)	Vegetables cultivation is a difficult job in spite of profitability, so I escape it.	10	7	15	33	35	75.2	8
9 (+)	I apply pesticides in vegetables field when it is attacked by pests	28	32	17	8	15	70.0	9
10 (+)	Our health is not good due to lower consumption of vegetables	17	43	14	21	5	69.2	10
11 (-)	I do not cultivate winter vegetables inspite of adequate irrigation facilities	10	35	11	41	3	58.4	11
12 (-)	Vegetables seedlings in nursery bed become damage due to excessive rainfall, so I don't grow seedlings.	22	52	5	19	2	45.4	12
13 (+)	Due to lack of storage facilities, I avoid vegetable cultivation.	0	14	6	61	19	43.0	13
14 (+)	Although growing vegetables seedling is not hard task but I purchase seedlings for transplant.	1	9	4	65	21	40.8	14
15 (-)	I don't cultivate vegetables inspite of having cultivable land	20	70	2	3	5	40.6	15

'although there are adequate transport facilities, I sell vegetables to whole seller in the field' (86%) was ranked third expressed by farmers. This indicates that most of the farmers like to sell their vegetables in the field because they feel that transportation of vegetables to market is a complex work.

Relationship between farmers' attitude and their selected characteristics

Data presented in the Table 4 indicate that among ten (10) characteristics of the farmers, four (4) namely education, family income, cosmopoliteness and knowledge on vegetable production showed significant and positive relationship with their attitude towards vegetable cultivation. These types of relationships were also found by Hoque *et al* (2001) and Paul *et al* (2001) in their respective studies. In addition, Uddin *et al* (2006) findings revealed that age, level of education and knowledge of environment friendly farming of the farmers had significant and positive relationship with their attitude towards sustainable agriculture**.** It could be said that the significant characteristics influenced the attitude of the farmers towards vegetable cultivation. On the contrary, the rest of the characteristics namely age, family size, farm size, training exposure, organizational participation and extension media contact had no significant relationship with the farmers' attitude towards vegetable cultivation. This means that these characteristics had not any influence of the same regard.

Table 4. The coefficient of correlation (r) between farmers' attitude and their selected characteristics (N=100 farmers).

Dependent variable	Farmers' charecteristics	'r' value (98 d.f.)
Farmers' attitude towards vegetable cultivation	Age	-0.136
	Education	0.342**
	Family size	0.062
	Farm size	-0.109
	Family income	0.204*
	Cosmopoliteness	0.273**
	Training exposure	0.094
	Organizational participation	0.015
	Extension media contact	0.118
	Knowledge on vegetables production	0.277**

** Significant at 1% level of probability and *significant at 5% level of probability.

Problem confrontation of the farmers in vegetables cultivation

Ten problems regarding vegetables production have been identified and farmers were asked to give their response as high, medium, low and not at all and the scores assigned to these responses were 3, 2, 1, and 0 respectively.

The problems were ranked on the basis of the value of Problem Confrontation Index (PCI). Problem Confrontation Index (PCI) was computed by using the following formula:

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

Where, PCI= Problems Confrontation Index

P_h= Frequency of the farmers having high problem

P_m= Frequency of the farmers having medium problem

P_l = Frequency of the farmers having low problem

P_n = Frequency of the farmers having no problem at all

Problem Confrontation Index (PCI) scores in 10 items of winter vegetables cultivation ranged 84 t0 285 against the range 0 to 300. The PCI of three problems were above 200, five were above 100 and two were below 100. The top five problems confrontation in rank order were: i) high price of good vegetables seed, ii) Lack of advice on vegetable cultivation, iii) low price of vegetable in harvesting time, iv) high price of fertilizers and insecticides, and v) insufficient irrigation in dry season. The farmers claimed that they did not get adequate good vegetables seed in cultivation

period. Sometimes although there were availability of good vegetables seed but they did not purchase due to high price. They also expressed that they did not get advice about modern vegetable cultivation technology. During harvesting period, the farmers vowed that price of vegetables become lower. In addition, most cases vegetables cultivation hampered by inadequate supply as well as high price of fertilizers and pesticides. During winter season, the vegetables cultivation is directly affected by insufficient irrigation facilities.

Table 3. Ranked order of the problems faced by the farmers in vegetables cultivation

Problems	Extent of problem confrontation				PCI score	Rank order
	High	Medium	Low	Not at all		
High price of good vegetables seed	90	6	3	1	285	1
Lack of advice on vegetable cultivation	80	10	8	2	268	2
Low price of vegetable in harvesting time	75	8	7	10	248	3
High price of fertilizers and insecticides	60	5	6	29	196	4
Insufficient irrigation in dry season	50	8	14	28	180	5
Lack of good vegetables seed	51	10	1	38	174	6
Lack of training facilities	25	25	21	29	146	7
Submerged land in sowing period	31	4	2	63	103	8
Failure to combat pests and diseases	21	15	5	59	98	9
Lack of marketing facilities	16	12	12	60	84	10

CONCLUSION

More than two-third (67%) of the farmers had moderately favorable attitude towards vegetable cultivation while only 7% had highly favorable attitude. Thus, it could be said that still there is verse scope to motivate farmers towards vegetables cultivation by different government and non-government extension program. Majority (64%) of the farmers had received short and mid-term training, a large proportion (77%) of the farmers maintained low organizational participation and 49% farmers had low contact with extension media. It could be concluded that proper training, organizational participation organized by different GOs and NGOs and extension media contact might have contribution in favorable attitude of farmers towards vegetables cultivation and their sustainable livelihood improvement.

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