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FARMERS' PERCEPTION AND FACTORS INFLUENCING ADOPTION OF HOMESTEAD VEGETABLE FARMING IN MYMENSINGH DISTRICT

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ABSTRACT

The present study focused on addressing the factors influencing the adoption of homestead vegetable farming by rural farmers in a selected region of Bangladesh. It also assessed the farmer's perception of vegetable farming in their homestead areas. A total of 92 households were interviewed randomly through field survey method. Perception index, gross margin and net return analysis, Logit regression model were employed to analyze the collected data. Most of the household's liquidity asset increased after involving in homestead vegetable farming which has been identified from perception index analysis. Vegetable cultivation in the homestead areas was profitable as the undiscounted benefit cost ratio for three selected vegetables was greater than one. The chances of farmers to practice homestead vegetable farming are increased with their level of education, farm size, household income, extension contact and availability of irrigation water. However, engagement in off-farm activities by farmers reduced the chance of involvement in homestead vegetable farming as the farmers had lesser time to devote in such activities. For encouraging farmers to practice homestead vegetable farming, both government and private institutions should play their role to provide regular extension service, training facilities and to ensure availability of irrigation water.

Keywords: Perception, homestead, adoption, profitability, vegetable.

I. INTRODUCTION

The economy of Bangladesh is predominantly based on agriculture and other activities are also anyhow related to agriculture sector. Agriculture sector contributes about 13.02 percent to the country`s Gross Domestic Product (GDP) and employs around 40.60 percent of total labor force (BBS, 2020). A homestead garden is a place near a household where crops are grown year-round for domestic use and sale (Keatinge *et al.,* 2012). FAO (1995) stated that "the home garden is an important land unit for households as it is often the center of family life; a well-developed home garden is a complete farming system; the home garden is the most direct means of supplying families with most of the non-staple foods they need year-round''. There are well over 31 million households in Bangladesh. Although the average size of the households is declining, the majority (especially in rural regions) have a patch of land next to the dwelling area (BBS, 2017). Moreover, the cultivable land is a scarce resource in densely populated Bangladesh, which is mostly employed for production of rice and other field crops. However, many small homesteads (around 20 million) of Bangladesh remains unutilized/underutilized/not scientifically managed, which could be brought under round the year vegetable cultivation for

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reducing food and nutritional security problems (Jahan *et al.*, 2016). Regular intake of adequate quantities of fruits and vegetables contribute to improve health and can create immunity against diseases (Mustafa *et al.*, 2021). The annual demand for vegetables in Bangladesh is about 13.25 million tons whereas the production is only 3.73 million tons (Rahman *et al.*, 2020), which implies a huge shortage of its production to supply the required per capita consumption. The average consumption of vegetables is 75 g/day whereas the recommended per capita vegetable consumption is 250 g/day according to Food and Agriculture Organization (FAO, 2017).

Homestead production of fruits and vegetables provides the household with direct access to important nutrients that may not be readily available or within their economic reach. A homestead vegetable garden serves as the primary source of vegetables and fruits as well as a consistent source of extra household income. Vegetables from homestead are mostly consumed at home and the remaining surplus is sold. This additional income is usually used to buy extra food, household supplies, poultry, medicines, and children's education. A homestead vegetable garden is particularly useful for overcoming seasonal food scarcity and increasing household self-sufficiency and also contributes to the improvement of rural nutrition (Islam and Uchiyama, 2009). It improves the resources of poor farmers and also meets several socio-economic and ecological conditions which contribute to sustainability and better living. Fresh vegetables and fruits grown on the homestead can contribute even more by increasing prospects for economic empowerment, better livelihood status, household food security, year-round nutrition and environmental conservation (Shaheb *et al.*, 2014). In a country such as Bangladesh where poverty and malnutrition is so widespread, successful use of this homestead land can be the difference between nutrient deficient and nutrient rich.

Many homestead areas in Bangladesh, ranging from small to large farmers, are fallow or underutilized, which is a common occurrence. Each farm household in rural Bangladesh has, on average, 0.09 acre of homestead land (BBS, 2021). There is an opportunity to bring these homesteads under year-round vegetable production (Shaheb *et al.*, 2014). Several studies related to the present research topic have been conducted in and outside the country (Akter *et al.* 2021; Okon and Idiong 2016; Haque, 2015; Galhena *et al.*, 2013; Jahan, 2012; Lane, 2011; Asaduzzaman *et al.*, 2011; etc.). While research on homestead vegetable farming adoption in developing countries are scarce, there is increasing evidence on farmers' perceptions on the benefits of homestead. Therefore, the present study is designed to focus on assessing the perception of farmers about homestead vegetable production and the factors influencing farmers' decision on adoption of homestead vegetable farming. This research is an endeavor to fill up existing research gap. The research was carried out with the following specific objectives: i) to measure the perception of rural households regarding homestead vegetables farming; ii) to calculate profitability of homestead vegetables farming; and iii) to estimate the factors influencing the adoption of homestead vegetables production.

II. MATERIAL AND METHODS

The research work was conducted in Sadar upazila of Mymensingh district in order to collect detailed information on family members' socio-demographics, household's perception about homestead vegetables farming and cost and return of homestead vegetables production. Both purposive and simple random sampling techniques were employed for this study. Two villages namely Char Kalibari and Char Nilakshmia were selected purposively. A list of farmers was prepared who were divided into two groups: homestead vegetable farming adopters and non-adopters. A total of 92 farmers were randomly selected, 60 practiced homestead vegetable

farming and 32 were not homestead gardeners. Primary data were collected by the use of well-structured questionnaires as well as personal interviews. Secondary data were also collected from different sources such as government annual reports, Bangladesh Bureau of Statistics, population census, data published in different books, policy documents about agricultural development, journals, etc.

Descriptive and econometric models were employed. Graphs and tables were also used to interpret the findings of the study. Farmers' perception regarding homestead gardening was investigated by employing perception index. For this, 5-point Likert scale was followed. A Likert scale questionnaire is the one in which the subjects are asked to mark how much they agree with the point of view in the item (statement) (Elia *et al.*, 2015). In this study, this scale (strongly agree, agree, neutral, disagree, strongly disagree) was used to assess the perception regarding homestead vegetables gardening. The research includes 9 positive statements related to homestead vegetable farming. The scoring is: i) Strongly agree (+2); ii) Agree (+1); iii) Neutral (0); iv) Disagree (-1); and v) Strongly disagree (-2). By using perception index (PI), the total score for each statement was calculated.

Several measures were undertaken to find out the profitability of vegetable production. At first, gross return was calculated by using following equation:

$$GR_i = \sum_{i=1}^{n} Q_i P_i$$

Where, GR_i = Gross return from i^{th} product (Tk./unit); Q_i= Quantity of i^{th} product (unit); P_i = Average price of i^{th} product (Tk./unit) in the harvesting period and i=1, 2, 3…n

Income earned from by-product of vegetables was also added in determining gross return Calculation of gross margin was done to have an estimate of the difference between total return and variable costs. The argument for using gross margin analysis is that the farmers are more interested to know their return over variable cost. Net return was obtained by deducting total cost (variable cost and fixed cost) of production for particular vegetable from its gross return.

$$\text{Net return} = P_y Y - \sum_{i=1}^{n} (P_{xi} X_i) - TFC$$

Where, P_y = Per unit price of the product (Tk/unit); Y = Quantity of production per acre; P_{xi} = Per unit price of the i^{th} inputs (Tk); X_i = Quantity of the i^{th} input per acre; TFC =Total fixed cost (Tk); and i=1, 2, 3…n

Finally, the undiscounted BCR, which is a relative measure, was also employed to compare benefit per unit of cost. The BCR was estimated as a ratio of gross returns and gross costs. Logistic regression was considered to be the appropriate model to estimate the influence of factors regarding the adoption of homestead vegetable farming. Logit model have been widely used in order to explore the factors affecting farmers' decision in adoption studies (Okon and Idiong 2016; Ullah *et al.* 2015; Akudugu 2012; Adesina *et al.* 2000; etc.). The dependent variable is dichotomous in our research problem (a value of 1 was assigned to the adopter farm households who were involved in homestead vegetable farming and 0 to the non-adopters who did not practice homestead vegetable farming). The parameters of the model were estimated with the maximum likelihood estimation technique. The Logit model then provides the

probability of a farmer adopting homestead vegetable farming. The model is specified as follows:

$$Y_i = \ln [Pi \div (1 - Pi)] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \epsilon$$

Where, Yi = Adoption of homestead vegetable farming; β0 = intercept; βi = The coefficients; ϵ = error term; X1 = Age of the household head (Years); X2 = Education of household head (Years); X3 = Farming experience (Years); X4 = Household size (number); X5 = Farm size (decimal); X6 = Training attended during last one year (1 = attended; 0 = did not attend); X7 = Extension service received (No. of visits by the extension worker during last one year); X8 = Household annual income (BDT); X9 = Irrigation availability (1 = year round available; 0 = rain fed); and X10 = Off-farm work (1 = engaged in off-farm activities; 0 = otherwise).

Explanatory variables were selected based on previous literature reviews (Akter *et al.* 2021; Firoozzare and Kohansal 2018; Okon and Idiong 2016; Uddin *et al.* 2016; Asfaw *et al.* 2012; Ghimire *et al.* 2015). The marginal probabilities of the key determinants were estimated based on expressions derived from the marginal effect of the Logit model was as follows:

$$dY/dX = \beta i \{Pi (1 - Pi)\}$$

Where, βi = Estimated Logit regression coefficient with respect to the i^{th} factor; Pi = Estimated probability of farmers' adoption status.

III. RESULT AND DISCUSSIONS

Perception index has been calculated for nine statements regarding homestead vegetable farming. Total score has been derived for each individual statement based on farmer's response to the statements. The index was constructed from the responses of homestead gardeners (60 respondents). From the Table 1, it is noticed that an increase in rural households' savings and cash at hand after involving in homestead vegetable farming was observed and this statement got the first rank with total score of 91.

Household's school dropouts were decreased after involving in homestead vegetable farming and this statement got the second rank with total score of 87. Farmers could afford sufficient food for their families after involving in homestead vegetable production. This statement was ranked third with total score of 84. Ability to manage the construction and repairing of housing ranked fourth with total mean score of 76. Tendency to borrow capital of rural households was reduced and ranked fifth with total score of 70. Access to health services of rural households was increased and ranked sixth with total score of 66. However, many farmers opined that their leisure time was decreased. Affordability of modern agricultural equipment for farming activities was also increased and ranked eighth with total score of 22. Table reveals that improved training facilities of rural households got the lowest rank with 14 score.

Overall, it is revealed that farmers perceived the cultivation of vegetables in their homestead areas quite well. They view this as a means of improving their living standard. Majority of households experienced an increase in liquidity assets after involving in homestead vegetable farming. Besides, affordability of sufficient food for farm families and modern agricultural implements was increased but at the same time leisure time was decreased after involving in homestead vegetable farming. Similar results were found by Akter *et al.* (2019). They showed

that majority of rural women had a moderately favourable opinion regarding homestead vegetable cultivation and changes in their livelihood.

Table 1: Perception of households regarding homestead vegetable farming

SN	Indicators	Measurement					Perception index	Rank
		Strongly agree	Agree	Neutral	Disagree	Strongly disagree		
01	School dropouts in the household has decreased	32	23	5	0	0	87	2
02	Access to health services	24	23	9	3	1	66	6
03	Training facilities have increased	3	10	45	2	0	14	9
04	Leisure time has been decreased	5	55	0	0	0	65	7
05	Savings and cash at hand have increased	35	23	2	0	0	91	1
06	Tendency to borrow capital has reduced	20	30	10	0	0	70	5
07	Afford sufficient food for your family	30	27	0	3	0	84	3
08	Afford modern agricultural equipment for farming activities	4	25	20	11	0	22	8
09	Manage construction and repairing of your housing after involving in homestead gardening	22	35	0	2	1	76	4

Source: Authors' calculation based on field survey, 2020.

Three vegetables were found to be commonly grown in the homestead areas by the respondents in the study regions. These vegetables were bean, brinjal and pumpkin. Therefore, profitability analysis was conducted for these three vegetables separately in Table 2. Cost is an important factor which was identified and calculated first in order to determine the net returns from homestead vegetables. The major production cost items include labor cost, seed or seedling cost, fertilizer cost, pesticide/insecticides cost, etc. Vegetable production is labor intensive. Among different cost items, labor cost represents the major costs amount for all three vegetables. This is supported by the findings of Islam and Uchiyama (2009) who also found similar kind of results. Farmers used both homes supplied and purchased seeds in the study area. Farmers applied different kinds of fertilizer in producing their vegetables like urea, TSP, DAP, MoP, etc. Besides chemical fertilizers, most of the farmers in the study areas used considerable amount of cow dung as manure in the production process of these vegetables.

Irrigation was another most important input for vegetables cultivation. Insecticides were applied to protect the vegetables from the attack of pests and diseases. Costs for insecticides and irrigation were highest for brinjal as compared to bean and pumpkin. Farmers spend almost Tk. 4000 per acre for bamboo and net in case of bean and brinjal production in their homestead areas.

In computing land use cost, average leased value of land per acre for the particular year was considered which the farmers would have paid if they leased the land instead of using own land. The land use cost remained same for all three vegetables and it was amounted to Tk. 15000 per acre in the study area. Moreover, cost for family labor was also calculated based on the market wage rate for hired labor which was highest for pumpkin (Tk. 7908 per acre). By combining total variable cost and total fixed cost, gross cost was calculated at Tk. 35342.38, Tk. 47891.51 and Tk. 34918.53 for bean, brinjal and pumpkin, respectively.

Table 2: Cost of homestead vegetable production

Particulars	Unit	Bean			Brinjal			Pumpkin		
		Qnt.	Price (Tk./ unit)	Total (Tk)	Qnt.	Price (Tk/ unit)	Total (Tk)	Qnt.	Price (Tk/ unit)	Total (Tk)
A. Gross return	Tk.			55635.4			96906.32			94517
i. Main product	Kg	2781.77	20	55635.4	3460.94	28	96906.32	3780.68	25	94517
ii. By product	Tk.	-	-		-	-		-	-	
Variable costs										
Seed	Tk.			200			700			300
Human labor (Hired)	MD	11.7	400	4680	17.2	400	6880	8.1	400	3240
Power tiller	Tk.			2000			3500			2000
Urea	Kg	20.5	16	328	59.7	18	1074.6	20.7	18	372.6
TSP	Kg	14.7	23	338.1	40.5	23	931.5	-	-	-
MoP	Kg	9.86	18	177.48	30.3	16	484.8	20.1	17	341.7
DAP	Kg	-	-	-	24.1	28	674.8	30.9	27	834.3
Cow dung	Kg	180.81	2.5	452.02	80.6	2.5	322.4	300	1.5	450
Insecticide	Tk.			900			2500			900
Irrigation	Tk.			3000			5000			3000
Bamboo and net	Tk.			4000			4000			-
Interest on operating cost	Tk.			803.78			1303.41			571.93
B. Total variable cost	Tk.			16679.38			27371.51			12010.53
Fixed costs										
Land use cost	Tk.			15000			15000			15000
Human labor (Family)	MD	9.16	400	3664	13.8	400	5520	19.77	400	7908
C. Total fixed cost	Tk.			18664			20520			22908
D. Gross cost (B+C)	Tk.			35343.38			47891.51			34918.53
E. Gross margin (A-B)	Tk.			38956.02			69534.82			82506.47
F. Net return (A-D)	Tk.			20292.02			49014.82			59598.47
G. BCR (undiscounted)				1.57			2.02			2.71

Note: MD = Man-days
Source: Authors' calculation based on field survey, 2020.

Gross margin and net return are very useful tools to analyze or compare performance of enterprises. Table 2 shows that, on average, the cultivation of three selected vegetables in homestead areas is profitable as is evident from the undiscounted benefit cost ratio (1.57, 2.02 and 2.71 for bean, brinjal and pumpkin, respectively). Related to this research, Asaduzzaman *et al.* (2011) found BCR for homestead vegetable gardening as greater than one in rural Bangladesh. Net return was found positive for all vegetables and stands at around Tk. 20292, Tk. 49014 and Tk. 59598 per acre of bean, brinjal and pumpkin production, respectively. That means, homestead vegetable growers earned substantial profit in the study areas. Islam and Uchiyama (2009) also reported the considerable profits from homestead vegetable gardens.

Detailed description for all variables included in the Logit regression model along with descriptive statistics and sign has been presented in Table 3. Almost all the selected explanatory variables were expected to have positive influence on the adoption decision except off farm work involvement by the household head which is hypothesized to have negative coefficient in the estimated model. Age and farming experience of household head may appear in with either positive or with negative sign.

The maximum likelihood estimates of the parameters in the Logit regression model displaying the behaviour of rural farmers towards the adoption of homestead vegetable farming are shown in Table 4. The Chi-square results showed that likelihood ratio statistics are highly significant suggesting the model has a strong explanatory power. The pseudo R^2 value of the model was 0.773. Thus, the explanatory variables used in the model are able to predict about 77 % of the factors influencing adoption of homestead vegetable farming. The parameter estimates of the Logit model provide only the direction of the effect of explanatory variables on the response variable. Estimates do not represent actual magnitude of change or probabilities (Okon and Idiong, 2016).

Table 3: Description of variables and their expected sign in the Logit model

Variables	Description	Mean	Standard deviation	Expected sign
Dependent variable				
Adoption of homestead vegetable gardening (Dummy)	1 = if the respondent adopted homestead vegetable garden, 0 = otherwise			
Explanatory variables				
Age (Years)	Age of household head	41.25	11.3	+/ -
Education (Years)	Years of schooling of household head	5.32	4.16	+
Farming experience (Years)	Years of experience in farming activities of household head	15.70	10.01	+/ -
Household size (number)	Number of household members	4.28	2.47	+
Farm size (decimal)	Area (decimal) under cultivation in survey year	0.53	0.19	+
Training attended (dummy)	1 = if the household head attended any training related to farming during survey year; 0 = otherwise)	-	-	+
Extension service (number)	Number of visits by extension worker to the farmers during survey year	1.80	1.20	+
Household annual income (BDT)	Amount of money income by the household in Bangladeshi Taka	44750	10200.10	+
Irrigation availability (dummy)	1 = if year-round irrigation is available to the households; 0 = rain fed)	-	-	+
Off-farm work (dummy)	1 = if the household is engaged in off-farm activities; 0 = otherwise)	-	-	-

Source: Authors' estimation based on field survey, 2020.

In order to derive the magnitude of the impact of independent variables on the probability of adoption, the marginal effects (which measure the expected change in an independent variable) were estimated and discussed. Marginal effect was computed differently for discrete (i.e., categorical) and continuous variables. Marginal effect is estimated for a discrete change of dummy variable i.e., how predicted probabilities were changed as the binary independent variable changed from 0 to 1 (Uddin *et al.,* 2016). Marginal effects for continuous variables measured the instantaneous rate of change. Five out of ten explanatory variables turn out significant in the estimated model (Table 4).

Among the demographic variables, the coefficient of age (X_1), farming experience (X_3) and household size (X_4) appeared with positive sign although these variables had insignificant

impact on the decision of farmers to adopt homestead vegetable farming. On contrary, Akter *et al.* (2021) reported a positive significant effect of age of women on their adoption decision of homestead gardening. Level of education of household head (X_2) had significant positive impact. The marginal effects with respect to education indicated that a unit increase in the years of schooling by household head will increase the likelihood of practicing homestead vegetable farming by 2.45 percent. Similar result was found by Akter *et al.* (2021), Okon and Idiong (2016) and Uddin *et al.* (2016). Education appeared to be important in adoption studies. The tendency to adopt homestead vegetable farming increased with increased years of education. This is because education enhances the ability to derive, decode, and evaluate useful information for agricultural production received from different sources (Asfaw *et al.* 2012; Kassie *et al.* 2011; Oduro-Ofori *et al.* 2014).

Table 4: Maximum likelihood estimates of factors influencing farmer's adoption of vegetable farming in homestead areas

Explanatory variables	Coefficient (SE)	Marginal effect (dY/dX)	Standard error	z values	P>|z|
Intercept	3.014 (3.203)	0.594			
Age of household head (Years)	1.027 (2.097)	0.013	0.895	1.67	0.897
Education of household head (Years)	1.016** (0.354)	0.0245**	0.104	3.36	0.028
Farming experience (Years)	0.653 (1.869)	0.090	0.188	0.94	0.670
Household size (number)	0.387 (0.116)	0.024	0.016	1.28	0.551
Farm size (decimal)	0.365* (0.034)	0.089*	0.043	2.82	0.095
Training attended (1 = attended)	0.527 (0.133)	0.124	0.101	1.04	0.479
Number of visits by extension worker	1.749* (0.433)	0.061*	0.167	2.19	0.084
Household annual income (BDT)	0.379** (0.190)	0.107**	0.011	3.26	0.022
Irrigation availability (1 = year-round available)	2.739*** (0.631)	0.452***	0.138	5.73	0.007
Off-farm work (1=engaged in off-farm activities)	-1.094 ** (0.328)	-0.293**	0.095	4.01	0.038
Model summary					
Log likelihood ratio		-61.59			
LR chi^2 (10)		392			
Prob > chi^2		0.000			
Pseudo R^2		0.773			

Source: Authors' estimation based on field survey, 2020.

Note: *** = Significant at 1 % level of probability; ** = Significant at 5 % level of probability; and * = Significant at 10 % level of probability

Agricultural land is the main asset of rural households in the study areas as well as an important resource for any economic activity. Farm size is a proxy indicator of wealth. Availability of sufficient farm area is a vital indicator for adopting homestead vegetable gardening. The marginal effect of farm size (X_5) was positively significant which implied that the rate of adoption of homestead vegetable farming was greater for those having larger farms. Akter *et al.* (2021) also found positive significant impact of farm size whereas Okon and Idiong (2016) showed significant negative impact of farm size on the adoption of organic vegetable farming.

Training (X_6) is a requirement for human development and productivity (Markovic, 2019; Nigam and Rajendra, 2019). Skilled farmers can capture more technical insights about gardening and can contribute to an improved farming environment, financial assistance and

expanded roles in economic well-being for their family (Bushamuka *et al.* 2005; Feleke and Zegeye 2006; Mignouna *et al.* 2011; Mariano *et al.* 2012; Yigezu *et al.* 2018). Participation in training programs was positively linked to adoption of homestead vegetable farming although the marginal effect was insignificant. This finding is in contrary with Akter *et al.* (2021) who showed a significant impact of training.

Extension service is another important consideration for the farmers. The marginal effect shows that number of extensions contact (X_7) had a positive value of 0.061 and it was statistically significant at 10% level of probability (Table 4). It implied that a unit increase in the number of extension contact will increase the probability of practicing homestead vegetable farming by 6.1 percent. The farmers got influenced and motivated by the extension agents to practice vegetable farming in homestead areas. The marginal effect of household income (X_8) was positive and statistically significant at five percent probability level. A unit increase in income will increase the likelihood to adopt homestead vegetable farming by 10.7 times. This implies higher income households are more likely to adopt vegetable farming in their homestead areas probably as these households will have the financial resources to employ in farming activities.

Irrigation water is essential for vegetable cultivation on smallholder homestead areas. The marginal value of irrigation water availability (X_9) was significantly and positively associated to farmers engaged in homestead gardening. Farmers normally use irrigation water from wells, tube well, deep tube well, ground water and collected rainwater for homestead gardening. Permanent installation of a mechanical source of irrigation water is expensive. Financially solvent farmers could opt for permanent irrigation sources and use water for homestead vegetable farming along with crop cultivation. Easy availability of year-round irrigation increases the likelihood of practicing homestead vegetable farming by 45.2 percent. This corroborates the findings of Akter *et al.* (2021) in their adoption study of women gardeners. The marginal effect of off-farm work (X_{10}) was statistically significant at five percent probability level but negatively associated with the likelihood of practicing homestead vegetable farming (Table 4). The implication is that household heads, who are involved in off-farm income generating activities, are less likely to adopt homestead vegetable farming.

IV. CONCLUSION

The present research attempts to analyze the farmers' perception and factors influencing the adoption of homestead vegetable farming in the study areas. Different analytical techniques like perception index, gross margin, net return, benefit cost ratio (BCR) and Logit regression model were employed for analysing the data in order to achieve the objectives. Perception of rural households regarding homestead vegetable farming was ascertained through perception index. Majority of households experienced an increase in liquidity assets after involving in homestead vegetable farming in the study area. Besides, affordability of sufficient food for farm families was increased but leisure time of farmers had decreased after involving in homestead vegetable farming. From the cost and return analysis, the study has shown that all three (bean, brinjal and pumpkin) selected vegetables were profitable to produce. Homestead vegetable farmers were benefited because they earned profit from selected vegetable production. Maximum likelihood estimates of Logit model showed varied impact of each explanatory variable on the likelihood of practicing homestead vegetable farming. The chances of farmers to practice homestead vegetable farming will increase with their level of education, farm size and their income. Access to extension services and availability of irrigation water will also enhance the adoption. However, off farm employment will reduce the chance of involvement in homestead vegetable

farming activities as the farmers would have lesser time to devote in such activities. It is hoped that the findings from this study will help government agencies, research institutions and policy makers to develop policies that will guide rural farmers by creating awareness on the benefits of vegetable farming in their homestead areas. Therefore, the study recommended that both government and private institutions should play their role in ensuring easy availability of inputs like irrigation water, extension services and proper training facilities at rural areas.

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