

## Household food security status of dairy farmer at Shahjadpur upazila in Sirajganj district

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### ABSTRACT

This study was carried out to investigate the household food security status of dairy farmer at three villages of Shahjadpur Upazila of Sirajganj District. This study was based on primary data using a semi-structured interview schedule during January to March 2018. Data were collected from a random sample of 60 household where the total dairy farmers were 240. Food security status of household of dairy farmer was measured on the basis of their per capita calorie consumption per day. Pearson's Product Moment Coefficient Correlation ( $r$ ) was computed to explore relationship of the respondents selected characteristics and their food security status. Most of the households were (40 percent) moderately food secured per year, 25 percent household had food secured per year and 35 percent households were low food secured per year. Dairy farmer's annual income, training experience, credit received had significant positive relationship with their household food security status.

## INTRODUCTION

Household food security is defined as access by all people at all times to enough food to ensure an active and healthy life (Maxwell et al., 2000). Achieving food security requires that the aggregate availability of physical supplies of food is sufficient, that households have adequate access to those food supplies through their own production, through the market or through other sources, and that the utilization of those food supplies is appropriate and socio culturally acceptable to meet the specific dietary needs of individuals (Riely et al., 1999; Rahman and Schmitz, 2007). Poverty, food insecurity and malnutrition are the usual phenomena for the rural Bangladesh. Poverty is the root cause of food insecurity.

Dairying is also considered a strong tool to develop a village micro economy of Bangladesh (Shamsuddin et al., 2007) in order to improve rural livelihoods and to alleviate rural poverty as well as to ensure the food security.

Large increases in agricultural investment will be needed both to raise incomes and increase the supply of food sustainably. In case of Bangladesh, Livestock especially dairy is highly inter-linked with regular cash income, food purchase capacity and food behavior. Traditional dairy farming is still practiced in all of the country; however,

improvement of dairy farming in rural areas of Bangladesh from traditional to integrated dairy would provide substantial opportunities to address the challenges of food security.

Dairy accounts for about 12% (FAO, 2010) of agricultural GDP and contributes to the livelihoods of many small-scale farmers in our country through income, employment and food (Bangladesh economic survey, 2009). Dairy farming helps the dairy farmer to improve their food security. Uddin et al. (2012) stated that small-scale dairy production had the potential to reduce poverty, provide food security, improve family nutrition and generate income and employment. Constraints were removed through broadcasting appropriate technology, disease prevention approaches, improved techniques for milking and feeding, artificial insemination information, and providing awareness that increased milk production and animal performance.

The important causes for food insecurity in about "half of the households" in the country are: (a) the rate of increase in annual food grain production is below the annual growth rate of production, (b) availability of other varieties of food such as fish, livestock and poultry, vegetables etc. is much below the demand, (c) lack of purchasing power of poor households to have access to required food, (d) incapability of the ultra poor comprising the destitute sick, old and infirm to participate in

income generating opportunities, (e) inadequate food safety net programs, (f) irrationality in intra-house food allocation, (g) dietary imbalance, (h) storage, processing and cooking practices affecting food utilization, (i) lack of income generating activities in small farm families, and (j) lack of knowledge, education, training and awareness in this concern.

There are few opportunities for employment of dairy farmer and most people make a living from growing crops, raising cattle, harvesting fish and day laborer work.

Dairy Farmers have significant roles for the agricultural productive activities but they are backward from modern technology and suffer from lack of capital. Sometimes they take loan from the international and national organization; NGOs and banks to fulfill the requirement of credit. Agricultural credit is important to dairy farmer in achieving food security and improving standard of living. Institutional credit and various training are important for the improvement of both the standard of living and food security of the dairy farmer.

Knowing of the status of food security of dairy farmer is essential where a major portion is secured by a dairy farmer. If their state of food insecurity is revealed, careful and need-based interventions may possibly be taken properly to mitigate the crises. For this reason, it was necessary to undertake a research study entitled "Household Food Security Status of Dairy Farmer at Shahjadpur Upazila in Sirajganj District". Hence, the researcher tried to find out answers of the following research questions.

- What is the household food security status of dairy farmer?
- What are the perceived strategies to cope with the food insecurity?
- What are the relationship of the characteristics of dairy farmer and their food security status?
- Objectives of the study

The present study has been carried out to fulfill the following specific objectives:

- To explore household food security status of dairy farmer at the selected location.
- To find out the perceived strategies to cope with the food insecurity.
- To find out the relationship of the characteristics of dairy farmer and their food security status.

## **METHODOLOGY**

### **Study area**

The study was conducted in Shahjadpur upazila in Sirajganj district.

The Sirajganj district is selected because this region is highly linked with dairy production. The major milk production comes from this region as well. So, researcher selected dairy farmer from Shahjadpur in Sirajganj for his study. Kayempur, Rupbati, and Narina village was selected because no research work has done based on food security status in this area. This village was good communication facilities.

### **Sampling design**

An updated list of Dairy farmer of the selected village was prepared by the help of the Bangladesh Dairy Enhancement Program (BDEP) which is managed by Land O'Lakes International and Upazilla Livestock Office. In total there were 240 dairy farmers (head from each household) in this selected village which were considered as population of the study. Twenty five percent of the population was randomly selected by using a Table of Random Numbers. Thus, a total of 60 dairy farmers constituted the sample size for the study.

### **Research instruments**

A semi-structured interview schedule was carefully prepared keeping the objectives in mind to collect relevant data. The questions and statements contained in the schedule were simple, direct and easily understandable to the respondents. The schedule contained both open and closed form of questions.

The draft interview schedule was prepared in advance before finally use. The draft schedule was pretested with respondents selected from the study area. This pretest facilitated the researcher to identify faulty questions in the draft schedule and hence necessary correction, addition and adjustment were made in the schedule accordingly.

### **Methods of data collection**

Personal interview method was used for data collection from the household heads. The interview was conducted mainly for assessing characteristics of the farmers and their condition of food security status at household level. Separate questionnaire set was prepared for individuals. Each person responded was given a brief introduction about the

nature and purpose of the study during the interview. They were asked the questions systematically in a very simple manner. Answers of those questions were recorded properly

### Data collection

Data were collected by the researcher himself from the dairy farmer. The interview was conducted with the respondents individually in their respective houses. The researcher took all possible care to establish rapport with the respondents so that they would not feel any hesitancy while starting the interview. If the respondents felt any difficulty in understanding any question, the researcher took utmost care to explain and clarify the same properly. No serious difficulty was faced by the researcher in collecting data.

### Measurement of variables

The dependent variable of the study was "Food security status of the household of dairy farmer". The characteristics of the dairy farmer i.e. age, level of education, family member, household farm size, annual income, training experience, credit received and strategies to increase food security were the independent variables. Measurement of independent variables

#### Age

Age of a respondent was measured in terms of years from birth to the time of interview which was found on the basis of response. A unit score was assigned for each year of one's age (Mamun, 2004).

#### Level of education

Level of Education was measured as the ability of an individual respondent to read and write or the formal education received up to a certain standard. A respondent who did not know how to read and write his or her years of schooling score was given as "0" (zero), can sign only his or her years of schooling score was given as "0.5", 1 was given who attended to school for class one. If a respondent passed class v, his education level score was 5 and so on. Question on this variable appears in term 2 in the interview schedule.

#### Family member

Family size was measured in terms of actual number of members in the family of a respondent. The

family members included the respondent himself, his wife, sons, daughters and other dependents. For example, if a respondent had four members in his family, his family size score was given as 4.

### Household farm size

Household farm size of a respondent was determined as the total area of his land on which he continued his or her living and also included total area of his land on which he continued his or her cultivation of crops during the period of this study. It included as area of land owned by him as well as those obtained from other by rented in, lease or other means. The household farm size of a respondent was measured in decimal by using the following formula:

$$F_s = F_a + F_2 + F_3 + F_4 + 1/2 (F_5 + F_6)$$

Where,

$F_s$  = Farm size

$F_a$  = Homestead area and pond usable for farming  
= Owned land

$F_3$  = Fallow land

$F_4$  = Giving the land to other by share cropping (barga)  
 $F_5$  = Land taken from other under share cropping (barga)

$F_6$  = Cultivable area taken as lease by a respondent from others

### Annual income

Annual household income was the total financial return of a household from farm (crops, livestock, poultry and fish) and non-farm sources (job, business and others) in one year. The earnings from these sources were added together for computation of annual family income score. Annual household income was expressed in '000' Taka. The methodology used by Mahzabin (2011) was followed in this experiment.

### Training experience

Training experience was determined by total number of days of training received by the dairy farmer from any organization in their entire lifetime. If a respondent took 3 days training on any aspect from GOs, NGOs or any other organization then his training experience score was 3 and so on (Mondal, 2007).

### Credit received

Credit received of a respondent was measured in terms of the amount of money received by his family members as loan from different sources. A score of one was given for each thousand Taka. The similar methodology was used by Akter (2003).

### **Perceived strategies to increase food security**

Coping is defined as the process of managing external and/or internal demands that tax or exceed the resources of the person. It is a complex and multidimensional process that is sensitive to both the environment and the personality of the individual. Coping happens when efforts are directed at solving or managing the problem that is causing distress. It includes strategies for gathering information, making decisions, planning, and resolving conflicts. This type of coping effort is usually directed at acquiring resources to help deal with the underlying problem and includes instrumental, situation specific and task-oriented actions (Folkman and Moskowitz, 2004).

Strategies of tribal people to increase food security were measured on the basis of their responses to the statements on the strategies to cope with food insecurity. The statements were made on the four aspects viz. crop production, livestock and poultry rearing, fisheries and non-farming activities.

A 4-point rating scale was used to obtain the score of the tribal people opinion. Score 3, 2, 1 and 0 were assigned for “Regularly”, “Occasionally”, “Rarely” or “Not at all”, respectively. Thereby total score of extent of strategies of landless char people to cope with food insecurity could range from 0 to 48. The similar methodology was used by Munna (2009) to measure the flood coping strategy.

### **Measurement of dependent variable**

The dependent variable in this study was household food security status of selected dairy farmer. It was determined using the consumption approach. Consumption is preferable to measure food security than income because it is less vulnerable to seasonality and life-cycle, less vulnerable to measurement errors because respondents have less reasons to lie, it is closer to the utility that people effectively extract from income, and for the poor most of income is consumed (FAO, 2002). To obtain the actual calorie consumption, food availability, access and utilization a by the household members, Household Calorie Acquisition method was used. Due to differences in household

compositions in terms of age and sex, there was a need to adjust the household size to adult equivalent household size. Adult equivalence was developed by World Health Organization considering the nutritional requirements of an individual by age and gender. Finally, a concise figure for average calories consumed per person per day was calculated and compared with an estimate of threshold kilocalorie level requirement i.e. 2122 kcal (HIES, 2010). The similar methodology was used by Mahzabin (2011) in her study to investigate food security status of farmers at plain land.

### **Data analysis**

At the end of data collection from the respondents, all the responses of the interview schedule were given numerical coded values. Data were analyzed in accordance with objectives of the study. SPSS (Statistical package for social sciences) computer program was used to perform the data analysis. Various statistical measures such as range, mean, number percentage, standard deviations and coefficient of variation were used to describe the selected characteristics of the respondents of the study area. In order to find out the relationship between the individual characteristics of the dairy farmer and their food security status, Pearson's Product Moment correlation co-efficient ( $r$ ) was computed. To reject or accept the null hypothesis 5 percent and 10 percent level of probability was used throughout the study.

## **RESULTS AND DISCUSSION**

### **Characteristics of the dairy farmers**

In the study there were nine selected characteristics of dairy farmers viz. age, level of education, family member, household farm size, annual income, , training experience, credit received, perceived strategies to increase food security. The composite findings of the selected characteristics of the dairy farmers are presented in Table 1 and have been discussed in subsequent sections.

#### **Age**

The observed age of the farmers ranged from 28 to 60 years. The mean age was 35.17 years with standard deviation of 6.91. The respondents were classified into three categories, such as young (up to 35 years), middle aged (36-55 years) and old (above 55 years) on the basis of their age as shown in Table 1.

The findings indicated that the highest proportion (58.34 percent) of the respondent in the study area was young aged category compared to 38.33 percent belonging to middle aged and 3.33 percent to old aged category. It indicated that 97 percent of the

respondents were young to middle-aged. Mahzabin (2011), Kobir (2007), Akhter (2007), Hasan (2006) found almost similar distribution of respondent in different age categories in their respective studies.

**Table 1:** Classification of dairy farmers according to their selected characteristics

Characteristics	Scoring system	Range		Number (N=60)	Percent %	Mean	SD
		Observed (Possible)	Category				
Age	Years	28-60 (Unknown)	Young ( $\leq 35$ )	35	58.34	35.17	6.91
			Middle-aged (36-55)	23	38.33		
			Old ( $> 55$ )	2	3.33		
Education level	Level of schooling	1-3 (Unknown)	Cannot read or write (0)	0	0	1.73	0.821
			Can sign only (0.5)	0	0		
			Primary (1-5)	60	100		
Family size	Numbers	1-5 (Unknown)	Small (1-4)	58	96.67	3.47	0.566
			Medium (5-6)	2	3.33		
			Large (above 6)	0	0		
Farm size	Decimal	6-74 (Unknown)	Small (6-20)	29	48.33	27.90	17.71
			Medium (21-50)	23	38.33		
			Large (above 50)	8	13.34		
Annual income	Taka (in "000")	87-227 (Unknown)	Small (80-129)	22	36.67	142975	28675.48
			Medium (130-164)	23	38.33		
			Large (above 164)	15	25		
Training experience	Days	0-21 (Unknown)	Low ( $< 7$ )	51	85	1.67	4.75
			Medium (7-20)	6	10		
			High (above 20)	3	5		
Credit received	Taka (in "000")	0-20 (Unknown)	Small ( $< 5$ )	47	78.33	3333.3	6806.4
			Medium (5-10)	6	10		
			High (above 10)	7	11.67		
Perceived strategies to increase food security	Score	17-34	Low (0-17)	3	5	23.52	3.81
			Medium (18-30)	52	86.67		
			High (above 30)	5	8.33		

SD= Standard Deviation

### Level of education

The level of education of the dairy farmers ranged from 0 to 3 and the average was 1.73 with a standard deviation of 0.821. On the basis of scores obtained, the respondents were grouped according to national standard of classification.

Among '0' percent were cannot read or write, '0' percent were can sign only, 100 percent had primary level of education and none had more years of schooling (Table 1). Findings indicated that majority of the respondent primary. This might be due to the reason that educational facilities were poor in these villages.

### Family member

The family member of the dairy farmers ranged from 1-5, the mean being 3.47 and the standard deviation was 0.566. On the basis of their household size score, the respondents were classified into three categories as shown in Table 1.

Computed data indicate the highest proportion 96.67 percent of the dairy farmers had small family size, 3.33 percent of the respondents had medium family size and '0' percent of the respondents had large family size.

### Household farm size

The household size of the respondents ranged from 6-74 decimal with an average of 27.90 decimal and standard deviation 17.71. The respondents were

classified in to three categories on the basis of their farm land as shown in Table 1.

Computed data indicated that 48.33 percent of dairy farmers belonged to small farm size category, while 38.33 percent fell in medium size category and 13.34 percent had large farm. It indicated that majority of the families possessing small amount of land.

### Annual income

Annual incomes of the dairy farmers were measured in „thousand Taka“ per year. It was ranged from 87 to 227 with an average of 142975 and standard deviation of 28675.48. On the basis of annual income, the respondents were divided into three categories (Table 1).

Computed data indicate that the highest proportion 38.33 percent of the respondent had medium income while 36.67 percent had low income, rest of the respondent 25 percent had high income.

### Training experience

The training experience of the respondents ranged from 0-21 days with an average of 1.67 and standard deviation 4.75. The respondents were classified in to three categories on the basis of their training participated as shown in Table 1.

Computed data indicated that 85 percent of dairy farmer belonged to low training experience, while 10 percent fell in medium training experience and 5 percent had high training experience. It indicated that majority of the families possessing low training experience.

Most of the cases, who were involved in the NGOs, got the training. They received training on issues like leadership management, different IGA (Cow rearing, goat rearing, beef fattening, tailoring etc.), vegetables cultivation, social development, business management, market operating, child protection and women rights, hygiene and sanitation etc.

### Credit received

The score of credit received by the respondents ranged from Taka 0 to 20 thousand with a mean of 3333.3 and standard deviation of 6806.44 (Table 1). More than 78.33 percent of the respondents were in the small category, 10 percent medium, rest 11.67 percent were in high category.

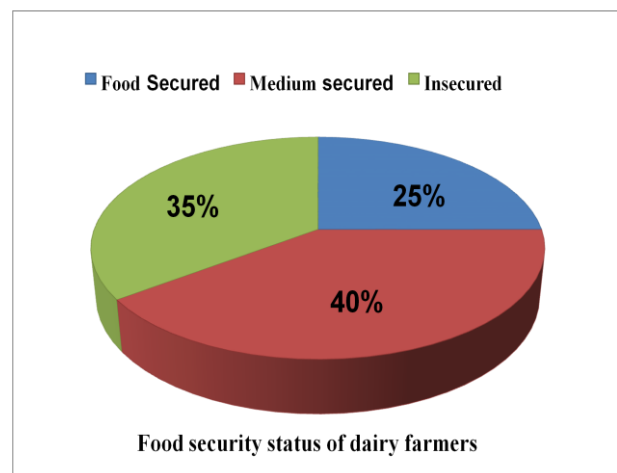
### Perceived strategies to increase food security

The observed score of different strategies ranged from 17 to 34 with a mean and standard deviation of 23.52 and 3.81, respectively. On the basis of scores of strategies to increase food security the respondents were categorized into three groups (Table 1). The Table indicates that the majority (86.67 percent) of the respondents had medium strategy, while 8.33 percent had high and 5 of them had low strategies to increase food security. The findings indicate that most of the dairy farmers adopted different strategies to increase food security due to flood, drought etc.

### Food security status of the dairy farmers

The food security situation per person per day in a household ranged from 1595 to 2531. The average year per food security by households was estimated to be 1978.33 score with a standard deviation of 229.07. The average was lower than the national average of 2318.3 kcal (HIES, 2010). Based on the food security status, dairy farmers have been classified into three categories as severely food secure, food low secure and food secure.

The household food security of the respondents has been diagrammatically shown in Figure 1.



**Figure 1:** Food security status of dairy farmers in the study area

The minimum calorie requirement set in Bangladesh is 2122 kcal/person/day (HIES, 2010). Computed data indicated that 25 percent of dairy farmers belonged to food secured, while 40 percent of dairy farmers belong to medium food secured and 35 percent had low secured. Findings show that food security still lingers as a truth for the dairy farmers.

Their access to food is hindered due to lack of purchasing capacity and quite a few other factors including damages by river erosion and natural calamities and seasonal market fluctuation of commodities.

It is assumed that the real situation of food insecurity is much graver in the sense that food security in this study has been measured considering the calorie intake of the households. This method may give a slight deviation of nutritional security as the main calories were met by carbohydrate intake in the households. Nonetheless, a matter of little contentment regarding food security remain for dairy farmers inhabitants due to some off-farm income generating initiatives of different GO and NGO.

**Relationship between selected characteristics of the dairy farmers and their food security status**

Pearson’s Product Moment Coefficient of Correlation (r) was computed in order to explore the relationships between the selected characteristics of the dairy farmers and their food security status. The coefficient of correlation (r) was used to test the null hypothesis regarding the relationship between two concerned variables.

Co-efficient of correlation ‘r’ between the selected characteristics of the dairy farmers and their household food security status has been presented in Table 2. However, the interrelationships among the different variables have also been computed by using correlation co-efficient.

Table 2 Correlation co-efficient between selected characteristics of the dairy farmer food security status

Selected characteristics of	Correlation coefficient (r) with 58d.f.
Age	0.032
Level of education	0.181
Family member	0.183
House farm size	0.235
Annual income	0.985**
Training experience	0.620**
Credit received	0.310*
Strategies to increase food security	0.080

\*\* Correlation is significant at the 0.01 level (2-tailed)

\* Correlation is significant at the 0.05 level (2-tailed)

However, the relationships have been presented in the following sub-sections dealing with one of the characteristics of the dairy farmers with their household food security status.

**Age and household food security status**

The computed correlation coefficient was found to be 0.032 (Table 2), which led to the following observations.

A negative relationship was found between the concerned variables. The computed value of r (0.032) was also found smaller than the tabulated value with 58 degrees of freedom at 0.05 level of probability. Hence, relationship was no significant at 0.05 level of probability.

Based on above findings, the null hypothesis could be rejected. This result was not beyond expectation as Faridi and Wadood (2010) reported that age of

the household head did not seem to have statistically strong significant impact on food security.

**Level of education and household food security status**

The computed correlation coefficient value was found to be 0.181 (Table 2), which reflects the following findings:

A positive relationship existed between the concerned variables. The computed value of r (0.181) was also found larger than the tabulated value with 58 degrees of freedom at 5 percent level of probability. Hence, the relationship was no significant at 0.05 level of probability.

Mahzabin (2010), Nigussie (2008), Najafi, (2003) and Haile et al. (2005) found positive relationship between education and household food security condition in their respective studies.

### **Relationship between family member and household food security status**

The relationship between family member of the dairy farmers and their food security was examined by testing the null hypothesis: "There is no relationship between family member and household food security condition". The correlation coefficient between these two variables was 0.183 (Table 2) which was not significant at 0.05 level. Thus, the null hypothesis could not be rejected and it was concluded that family member of the dairy farmer had no relationship with their household food security status. This means that the development of food security of the dairy farmers was independent of their family member.

### **Household farm size and household food security status**

The relationship between categories of household land size of the dairy farmers and their food security status has been shown in Table 2. The computed  $r$  value was 0.235 which reflects the following observations:

The relationship between the concerned variables was positive. The computed value of  $r$  (0.235) was also found larger than the tabulated value with 58 degrees of freedom at 5 percent level of probability. Hence, the relationship was significant at 0.05 level of probability.

Thus it could be said that the categories of household farm size of the respondent could play a significant role in securing household food security. Annual income and household food security status

Following observations were made based on the computed correlation coefficient value  $r$  (0.985) presented in Table 2.

A positive relationship existed between the concerned variables. The computed value of  $r$  (0.985) was also found larger than the tabulated value with 58 degrees of freedom at 1 percent level of probability. Hence, the relationship was strongly significant at 0.01 level of probability.

Based on the above findings, the null hypothesis was rejected. Considering the above findings the researcher concluded that higher the annual income, the higher is the probability that the household would be food secure. This result was not beyond

expectation as Mahzabin (2011) and Babatunde et al. (2007) found similar findings in their studies.

### **Training experience and household food security status**

The computed correlation coefficient value was found to be 0.620 (Table 2). It reflects the following observations.

The relationship between the concerned variables was positive. The computed value of  $r$  (0.620) was also found larger than the tabulated value with 58 degrees of freedom at 1 percent level of probability. Hence, the relationship was significant at 0.01 level of probability.

On the basis of above findings, the null hypothesis was rejected and hence it can be concluded that the training experience of the dairy farmers had positive and significant relationship with their food security status.

### **Credit received and household food security status**

The computed correlation coefficient was found to be 0.310 (Table 2), which led to the following findings:

A positive relationship was found between the concerned variables. The computed value of  $r$  (0.310) was also found larger than the tabulated value with 58 degrees of freedom at 0.01 level of probability. Hence, the relationship was not significant at 0.01 level of probability.

On the basis of above findings, the null hypothesis was rejected and hence it can be concluded that the credit received of the tribal people had positive and significant relationship with their food security condition.

### **Perceived strategies to increase food security and household food security status**

The computed correlation coefficient value was found to be 0.080 (Table 2). It reflects the following observations.

The relationship between the concerned variables was positive. The computed value of  $r$  (0.651) was also found larger than the tabulated value with 58 degrees of freedom at 5 percent level of probability.



Hence, the relationship was significant at 0.05 level of probability.

On the basis of above findings, the null hypothesis was accepted. Hence it can be concluded that the perceived strategies to increase food security had positive and no significant relationship with their household food security status. Thus it might be said that who perceived more strategies at a time, he would be more food secure.

## CONCLUSION

The findings of the study revealed that 25 percent of dairy farmer belonged to food secured, while 40 percent of dairy farmer belong to moderately food secured and 35 percent had low secured. Thus it might be told that twenty five percent of the dairy farmer households remain under either food secured or severe food insecurity indicating a grave scenario in dairy farmer.

Perceived strategies to cope with the food insecurity are positively correlated with the household food security status but it is not significant with household food security status.

Dairy farmer suggestions to ensure better food for the households were mainly centered on alternate income generation through technical supports from NGOs and concerned departments of GOs. It may, thus, be indicative that the dairy farmer entirely did like to get only financial grants aids to improve their household food security status.

Annual income of the dairy farmer had strongly positive significant relationships with their household food security status. Having high annual household income are not only essential to rearing dairy and produce horticultural crops but also important factors for dairy farmer to create new income generating activities. It may aid to secure better food to the family.

Training experience and Credit received had positive significant relationships with household food security status. Training experience and credit received might be changed the attitude of household head which in turn enables to adopt new techniques of income generation and consequently it might have helped achieve household food security.

## Recommendations of the study

Technical supports like training and credit may boost off-farm income of the dairy farmer. Mere relief supports and safety net programs may not be viable option throughout the year or for several years. But these programs are effective in case of seasonal and climatic adversities. By all means their household income should be increased to achieve better market access and buying power as a whole.

Government must have policies to generate activities for dairy farmer during climatic disasters and lean season of agricultural production. This may ensure their incomes to buy at least minimum food for households.

Arrangement of adult educational programs for the dairy farmer along with increased extension contact by the concerned departments may help in improving their household food security conditions. Income generation is vital for ensuring rights of food of the dairy farmer to their basic needs including access to sufficient food. Therefore, it might be told that through alternative income generation in addition to farming activities may be give support to improve their household food security levels. In this regard concerned departments of government and NGOs can play a significant role.

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