

# Problems Faced by the Participant Farmers in the Training Process: A Case of Climate Risk Management Training in Agriculture

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## ABSTRACT

Training is a process of enhancing the capabilities of a person to utilize a specific technique or technologies. But various problems hinder its effectiveness. This study tried to investigate the problems faced by the participant farmers in training process on climate risk management in agriculture and to determine the factors that influence their problem orientation. Data were collected from the trained farmers of selected three unions of Nalitabari Upazila of Sherpur district of Bangladesh during April to May, 2015. The sample size of the study was 65 trained farmers and it was drawn from a population of 65 using total population sampling technique. For collecting quantitative data structured interview schedule was used. Majority of the farmers (60.0%) had faced medium problems during the training process. "Lack of personal incentives to training" got the highest score and the first ranked problem for the farmers. Besides this, "Biasness in trainee selection", "Lack of adequate resources", "Lack of motivation and encouragement by other farmers" are some major problems faced by the farmers. Gender, farm size, access to information sources and attitude towards training were among the farmer's characteristics found significantly correlated with the problems faced by them with only gender showing positive relationship. Among them access to information sources alone explained 27.2% of the variations to the extent of problems faced by the farmers was confirmed by the step-wise multiple regression analysis. However, attitude of farmers towards training and farm size also contributed significantly to explain the variation. A proper planning from Government with a better information dissemination system and access scope should be provided to the farmers to make the training given by different organization more effective.

**Keywords:** Training, medium problem, incentives, information source, attitude

In a changing world, adaptation to new technology and innovation is a requisite to development. Training is the process to make an individual capable to acquire the specific knowledge, skills and attitude for the adaptation (Mat *et al.*, 2011; Armstrong, 2001). It also enhance the ability of an individual to handle a particular situation and doing the required work for a specific job accurately (Rosholm *et al.*, 2007; Nilsson, 2010; Ahmed, 2009). Training also has an influence on competency level of the farmers so that an individual

can apply the acquired knowledge and skills from the training (Jothilakshmi *et al.*, 2009). In case of agriculture, where things are changing rapidly, training is a major way to make the more traditional farmers look positively to new technologies. Agriculture is facing various problems throughout the recent times and climate change is one of the most influencing one (Adams *et al.*, 1998). Climate influence productivity of crop as well as cropping patten as crops are very much dependent on climate (Basak *et al.*, 2009). This influence

is more in developing countries than the developed countries because most of the developing countries depend on agriculture for their living and economy (Action Aid, 2008). In Bangladesh this impact is more than other regions as its geographical location is prone to climate change (Saadat and Alam, 2013). Infrequent natural disaster is a major outcome of climate change and is influencing the overall agricultural pattern of the country (MoEF, 2009; Yamin *et al.*, 2005). Government is finding proper solutions like developing new traits, varieties, and crops, new cropping pattern, efficient water management and irrigation techniques, improved production management practices, better marketing and supply chains, early warning, better forecasting techniques, and providing insurance of crops using their research and extension system. Training used as a major tool for disseminating the information and technologies as well as enhance the capabilities of farmers to utilize the information to withstand the risk. Government using its extension wing i.e. DAE is providing training on disaster and climate risk management is specific 52 climate prone upazilas of Bangladesh on a limited basis (DCRMA, 2015). But as we know, training offered to farmers were not responsive to farmers' needs and all elements of the training process or cycle are defective and deficient (Osman, 2007). Sometimes weak training course design and delivery make training less effective (Hoque *et al.*, 2008). So, this is necessary to see the problems faced by the farmers during the training process. It will help the training to be more effective in future as this training is at its initial phase and it will be conducted on a large basis in future. Considering the above facts the following objectives are constructed: (i) To understand the socio economic condition of the farmers who has taken the mentioned training; (ii) To find out the problems faced by the farmers during the training process; (iii) To explore the influential factors on the problems faced by the farmers.

## METHODOLOGY

### Study Area

The study was conducted in three unions of Nalitabari Upazila under Sherpur district of Bangladesh where the training on climate risk management was given to

the farmers. The study area was selected purposively for investigation, because this area is climate risk area and climate risk management training was given for an extended time. Disaster & Climate Risk Management training was given to farmers during 2013 to December 2014. The farmers are prone to flash flood risk as the agriculture of the area is heavily influenced by the flash flood.

### Population and Sampling

The farmers who received the training on disaster and climate risk management of the selected unions of Nalitabari Upazila were considered as the population of the study. The total list of participants (65) of climate risk management training was obtained from the office of the Upazila Agriculture Officer of Nalitabari Upazila under Sherpur District. Total population sampling technique was used in selecting the respondents from Climate Field School and thus the total of 65 trained farmers were selected as sample size from the population. The study areas were selected purposively.

### Data collection technique

Both qualitative and quantitative means of data collection procedures were used in the study. Data were collected through the pre-tested questionnaire by face-to-face interview procedure during April to May, 2015. The interviews, lasting about one to two hours for each farmer, focused on the problems faced by the farmers during their training. Cross-check interviews were conducted with Sub-Assistant Agriculture Officer (SAAO) and relevant non-government organization (NGO) workers. Data from questionnaire interviews were coded and entered into SPSS software package for analysis.

### Measurement of Variables

Gender, age, year of schooling, family size, farm size, farming experience, annual family income, access to information sources, training received and attitude of farmers towards training was the explanatory variables of the study. Problems faced by the farmers during training process was the focus variable of the study. The farmers were asked to give their response

Table 1: Characteristics profile of the farmers

Characteristics (Measuring units)	Score ranges		Categories	Trained farmers farmers		Mean	SD
	Possible	Observed		No.	%		
Gender	—	—	Male	44	67.6	1.32	0.471
			Female	21	32.4		
Age (Years)	unknown	18-62	Young (up to 35)	33	50.8	38.55	11.52
			Middle aged (36-50)	21	32.3		
			Old (above 50)	11	16.9		
			No schooling(0)	5	7.7		
Year of schooling (Total years of schooling)	unknown	0-15	Can sign only(0.5)	14	21.5	6.07	4.46
			Primary (1-5)	11	16.9		
			Secondary (6-10)	30	46.2		
			Above secondary (Above 10)	5	7.7		
Family size (No. of members)	unknown	1-10	Small (up to 4)	38	58.5	4.31	1.84
			Medium (5-8)	25	38.5		
			Large (above 8)	2	3.1		
			Landless (<0.02 ha)	0	0		
Farm size (Hectare)	unknown	0.22- 4.34	Marginal (0.02-0.2 ha)	0	0	1.02	0.87
			Small (0.21-1.0 ha)	45	69.2		
			Medium (1.01-3.0 ha)	17	26.2		
			Large (>3.0 ha)	3	4.6		
Farming experience (Years)	unknown	2-50	Less (up to 15)	24	36.9	21.55	11.99
			Medium (16-30)	27	41.5		
			High (above 30)	14	21.6		
Annual family income (000' Taka)	unknown	5-166	Low (up to 55)	37	56.9	56.08	39.43
			Medium (56-110)	21	32.3		
			High (above 110)	7	10.8		
Access to information sources (scores)	0-36	8-28	Low ( up to 12)	7	10.8	20.91	5.12
			Medium ( 13-24)	41	63.1		
			High (above 24)	17	26.2		
Training received on different agricultural issues (Days)	Unknown	1-5	Short duration (up to 7)	65	100	3.25	1.16
			Medium duration (8-30)	0	0		
			Long duration (above 30)	0	0		
Attitude of farmers towards training (scores)	9-36	23-33	Low (up to 18)	0	0	29.14	2.08
			Medium (19-27)	18	27.7		
			High (above 27)	47	72.3		

against 14 selected problems which the farmers faced in participating in training sessions. The problems were selected after in depth consultation with experts, proper review of literature and pre-testing with farmers. A 4-point rating scale for measuring problem confrontation score of the farmers was used. The weights assigned for each response were: 3 for high problem, 2 for medium problem, 1 for low problem and 0 for not at all.

For better understanding of the extent of problems faced, Computed Problem confrontation Score (CPCS) was developed to rank order the problems by the following formula:

$$PCS = P_h \times 3 + P_m \times 2 + P_l \times 1 + P_n \times 0 \quad \dots(1)$$

Where,

PCS = Problem confrontation Score

Ph = Number of farmers indicating high problem

Pm = Number of farmers indicating moderate problem

Pl= Number of farmers indicating low problem

Pn= Number of farmers indicating no problem at all

The problem confrontation score was obtained by adding weights of responses of the problems and therefore, the problem confrontation score could vary from 0 to 42 for each respondents, where 0 indicating 'no problem' and 42 indicating 'highest problem'.

To explore the factors associated with the problems faced by the farmers during training process coefficient of correlation and step-wise multiple regressions were used.

## RESULTS AND DISCUSSION

### Selected socio-economic characteristics of the farmers

The results indicated in the Table 1 and explained the socio-economic characteristics of the respondents. Among the respondents 44 were male and 21 were female. Majority of the farmers of the study area are young aged to middle aged having a mean value of 38.55 years. Most of the farmers of the study area possess secondary educational level. The average year of schooling of the respondent was 6.07 years. Maximum farmers have small to medium sized family with an average of 4.31 members per household.

The farm size of the majority of the farmers (45%) in the study area was small. The average farm size of the respondents was 1.02. Most of the respondents had less to medium farming experience having the mean value of 21.55 years. Respondents of the study area had low to medium household income with an average value Tk. 56.08 thousands per year. Medium access to information sources was another socio-economic characteristic of the respondents and having mean value of 20.91. Among the respondents all farmers have participated in training programs on the topic of different agricultural issues. Among the training receivers, all of the farmers having short duration training with an average value of 3.25 days. The study also showed that the highest proportion of the farmers (72.3%) had high level of attitude towards training with an average score of 29.14.

### Problems faced by the Farmers during training

The Problem faced by the respondents in participating the training sessions ranged from 8 to 22 against the

**Table 2:** Distribution of the farmers according to the Problem faced by them

Possible range	Observed range	Categories	No.	Percent	Mean	Standard deviation
0 - 42	8 - 22	Low Problem (up to 14)	26	40.0	15.55	3.32
		Medium Problem (15-28)	39	60.0		
		High Problem(above 28)	0	0.0		
		<b>Total</b>	<b>65</b>	<b>100.0</b>		

possible range of 0 to 42. Based on the Problem faced by the farmers, they were classified into three categories: 'low problem (up to 14)' 'medium problem (15-28)' and 'high problem (above 28)' and presented in Table 2.

The data presented in Table 2 shows that the highest portion of the respondents (60.0%) had faced medium problem in participating in training sessions, while 40.0% of the respondents had faced low problem. This might be because they are more interested in training and the training authorities were much sincere in arranging the training sessions.

For determining the extent of confrontation of the individual problem rank order was made computing Problem Confrontation Score. According to the rank order (Table 3), the top five problems with highest Problem Confrontation Score have been described here.

Table 3 shows that "Lack of personal incentives to training" got the highest score (PCS-177) and hence was considered as the 1<sup>st</sup> ranked problem. During training the practitioners do not provide sufficient incentives to the famers. As most of the farmers in Bangladesh are not solvent monetarily, so it would not encourage them to attend a long training session without any

monetary support. The problem "Biasness in trainee selection" got the 2<sup>nd</sup> highest scores (PCS-98) and hence was considered as the 2<sup>nd</sup> ranked problem. This may be due to the biasness of the local leader or the selection personnel to select those farmers for training who were closely related to them. The problem "Lack of adequate resources" got the 3<sup>rd</sup> highest scores (PCS-97) and hence was considered as the 3<sup>rd</sup> ranked problem. As maximum farmers of Bangladesh are poor, they lack proper resources to arrange a proper training. Also support from funding authorities was less to establish a comfortable training venue with adequate resources.

The problem "Lack of motivation and encouragement by other farmers" got the 4<sup>th</sup> highest scores (PCS-88) and hence was considered as the 4<sup>th</sup> ranked problem. This may be due to social barriers prevailing in the rural areas that restrict farmers to try out new things and especially for women farmers, as they lack proper motivation from peer farmers to attend such training. The problem "Lack of like-minded team" got the 5<sup>th</sup> highest scores (PCS-82) and hence was considered as the 5<sup>th</sup> ranked problem. This may be due to the different background of the farmers from where they belong like their income, farm size, education etc which made them think different

**Table 3:** Rank order of the problems based on their extent of confrontation

Problems	Extent of problem				Problem confrontation score	Rank order
	High	Medium	Low	Not at all		
Lack of peer support	0	14	31	20	59	9
Lack of trainer support	0	8	34	23	50	11
Lack of motivation and encouragement by other farmers	1	33	19	12	88	4
Lack of adequate resources	0	44	9	12	97	3
Over burden with other responsibilities	0	19	41	5	79	6
Lack of time management	0	12	50	3	74	8
Lack of like-minded team	1	20	39	5	82	5
Lack of responsibility of training coordinator	0	9	24	32	42	12
Autonomy by the Trainer	0	1	15	49	17	14
'Resistance to change' attitude of the peers	0	1	19	45	21	13
Lack of personal incentives to training	49	14	2	0	177	1
Lack of logical sequence of training topics	0	18	43	4	79	7
Biasness in trainee selection	4	27	32	2	98	2
Irregularity of trainee attendance	0	3	47	15	53	10

from others. It might create some problems to be on the training session as diversity in opinion sometimes makes farmers less motivated in accepting new things.

**Relationship between the Selected Characteristics of the Farmers and problems faced by them during training process**

To examine the relationships of each of the selected characteristics of farmers and problems faced by them during training process, a Pearson’s product moment coefficient of correlation analysis was used. The results of the correlation analysis between the concerned variables have been presented in Table 4.

**Table 4:** Correlation between selected characteristics of farmers and problems faced by them during training process, (N=65)

Focus variable	Explanatory variables (selected characteristics)	Correlation coefficient (r) with 68 d.f.
Problem faced by the farmers during training process	Gender	0.452**
	Age	0.012
	Year of schooling	-0.110
	Family size	0.134
	Farm size	-0.437**
	Farming experience	-0.048
	Annual family income	-0.140
	Access to information sources	-0.507**
	Training received on different agricultural issues	-0.020
	Attitude of farmers towards training	-0.329**

\*\* Significant at 0.01 level of probability (table value 0.325 with 63 df)

The results (Table 4) shows that only gender, farm size, access to information sources and attitude towards training were found significantly correlated at 1% level of probability with the focus variable. Among them farm size, access to information sources and attitude towards training were found negatively significant with the focus variable. It is clearly indicated from the Table 4 that gender have positive influence on the focus

variable. In this case 1 was given to male and 2 was given to female to measure the gender frequency. So it is quite obvious that female trainees face more problem during the training process. The cultural and social barriers of the country restricts women to participate freely to the outside activities. As training is an event where male and female were involved outside at a separate place many women were not allowed to take part there.

Farm size is another area which influences training process. Farmers having large farms are at low risk while using their resources. Although farmers with small farms have to try all-out to utilize their resources for maximum output. So they always try to learn more and concentrate more on different training aspect. Large farmers give less focus to minutes of different training aspects. So it’s very much clear that as the farm size of the farmers increases they will face less problems during the training.

A person having adequate information can judge a matter more clearly than others. So, access to information give a person clear idea about something he is learning. Inversely a person having less information a particular topic will question more and judge it wrongly. As the access to information sources increases a person get more hold to judge what is going around him. That’s why this character of farmers is negatively significant to identify the problems of the training process.

Attitude of farmers towards training has negative significant relationship with the focus variable. It is quite easy to understand that a person having positive attitude towards training will focus less on identifying problems in the training process. They will always try to see the positive sides of the training.

**Estimation on identifying the influential factors on the problems faced by the farmers**

A step-wise multiple regression analysis was employed to identify the determinants of the problems faced by the farmers during training process. The stepwise multiple regression analysis (Table 5) indicates that out of four explanatory variables (those have possess significant relationship in correlation analysis) three variables finally entered into the model and contributions of

**Table 5:** Step-wise multiple regression analysis showing contribution of the selected characteristics to the problems faced by the farmers during training process

Variables entered in the model	Coefficient of determination	Multiple R <sup>2</sup>	Change in R <sup>2</sup>	Variance explained (%)	Significant level	F-value	t-value
Access to information sources	0.522	0.272	0.272	27.2	0.000	23.573	-4.855
Attitude towards training	0.593	0.351	0.079	7.9	0.008	16.787	-2.748
Farm size	0.640	0.409	0.058	5.8	0.017	14.091	-2.449

**Table 6:** Step-wise multiple regression model showing coefficients of dependent variable with the contributing characters

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	21.438	1.306		16.416	.000
	Access to information sources	-.295	.061	-.522	-4.855	.000
2	(Constant)	30.567	3.547		8.617	.000
	Access to information sources	-.277	.058	-.491	-4.773	.000
	Attitude of farmers towards training	-.332	.121	-.283	-2.748	.008
3	(Constant)	29.759	3.428		8.680	.000
	Access to information sources	-.225	.060	-.398	-3.757	.000
	Attitude of farmers towards training	-.311	.116	-.265	-2.672	.010
	Farm size	-.861	.352	-.259	-2.449	.017

a. Dependent Variable: Problem faced by the farmers during training process

these variables (access to information sources, attitude towards training and farm size) which accounted for 40.9% (adjusted R<sup>2</sup> = 0.640 and F-values, p>.01) of the total variation in the problems faced by the farmers during training process.

The first variable to enter the step-wise multiple regressions was the access to information sources which solely had the highest contribution of 27.2% in predicting the problems faced by the farmers during training process. It indicates that farmer's access to different information sources mainly regulates their perception about the problems they faced during the training. Having a negative t-value suggests that access to information sources influences the problem confrontation reversely meaning while the access increases the problem confrontation decreases significantly. It is very much understandable that access to information sources make an individual more edifying to realize any situation. So in a particular situation, a

person with less information will get more agitated than the one with high information. As the high informative person will analysis the situation and understand what seems as a problem first.

The second variable to enter the step-wise multiple regressions was the attitude of the farmers towards training which had contribution of 7.9% in predicting the problems faced by the farmers during training process. This variable also have negative t-value. It suggests that positive attitude towards training will decreases the problem confrontation of the farmers. When a person is optimistic about something it is obvious that he will make his mind to see things more positively.

The third and final variable that enter the step-wise multiple regressions was the farm size which had contribution of 5.8% in predicting the problems faced by the farmers during training process. It also shows similar trend like the other variable indicating negative t-value. Farmers with higher farm size will face less

problems than the one with less farm size. Large farmers are normally rich to take different risk related to agricultural activities. They have the freedom to try out new things as they have the cover from other area where they grow usual crops. So large and rich farmers can overlook several aspects of training as they don't expect material and monetary assistance from the training to apply the new techniques and technologies.

The following predicted equation (i) was developed using the results found in the Table 6.

$$\text{Problems faced by the farmers during training process} = 29.759 - 0.225 (\text{Access to information sources}) - 0.311 (\text{attitude of farmers towards training}) - 0.861 (\text{farm size}) \dots(i)$$

The equation shows the probability of problems faced by the farmers during training process. The contributing factors access to information sources, attitude towards training and farm size will have influence on the problems faced by the farmers as much as shown in the equation such as if access to information sources increases by one unit the problems faced by the farmers score will decrease by 0.225 while attitude of the farmers towards training increases one unit, the problems faced by the farmers will be decreased by 0.311. Finally, one unit increase of farm size will decrease the problems faced by the farmers by 0.861. Besides, Standardized coefficient beta values shows that access to information sources of the respondents (-0.398) contributes more than the attitude of farmers towards training (-0.265) and farm size (-0.259) to the problems faced by the farmers during training process.

## CONCLUSION AND RECOMMENDATIONS

Farmers are facing low to medium problem in participating training sessions. Mainly the lack of incentives given to the farmers made them less motivated in the training sessions. These problems need to be taken under consideration as our poor village farmers need some monetary support which will make their interest in the training sessions improve further. They should be made more motivated towards training to develop their skill to resist in any adverse situation to agriculture. They should be provided with adequate

training resources and like-minded team so that they can learn and extract the benefit of the training. Training providing organizations should be more careful in trainee selection to make training more fruitful to the intended persons. Besides farmers access to information source can play a vital role in changing their attitude towards training by providing important information to realize the relevancy of the training. So, a proper plan for better access and better information dissemination system for the farmers is highly necessary to make them more capable to perceive the training better as well as endure the climate risk condition. Government especially its extension wing i.e. DAE (Department of Agricultural Extension) should come with a plan considering the influential factors to make the given training more operational.

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