



## **Participation of the *Saotal* Farmers in Agricultural Activities of CARITAS in Dinajpur District of Bangladesh**

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### **Authors' contributions**

*This work was carried out in collaboration between all authors. Author MASM designed the study, wrote the protocol, designed the conceptual framework and supervised the research work. Author MRK co-supervised the research work. Author MSR did statistical analyses and overall monitoring of the research. Author HMAS did the field survey, collected data and wrote the first draft of the manuscript. Author NM managed the literature searches and helps in conducting field survey. All authors read and approved the final manuscript.*

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### **ABSTRACT**

The main purpose of this study was to describe 10 selected characteristics of the *Saotal* farmers, to determine the extent of participation of the *Saotal* farmers, to explore the relationship between the selected characteristics of *Saotal* farmer and their participation in agricultural activities of CARITAS and to identify the problems faced by the *Saotal* farmers in agricultural activities of CARITAS. Data were collected using interview schedule from a sample of 96 *Saotal* farmers selected by multistage random sampling procedure from 10 villages of Biral and Chirirbandar upazila of Dinajpur District

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during 1 September 2012 to 15 October 2012. Ten selected characteristics namely age, educational qualification, farm size, agricultural training received, annual income, credit received, cosmopolitaness, NGO participation, extension communication exposure and attitude towards NGOs of the *Saotal* farmers were considered as independent variables while their participation in agricultural activities of CARITAS constituted dependent variable. The dependent variable was measured based on three aspects of agriculture namely crop cultivation, livestock rearing and homestead plantation and finally overall agricultural participation was determined by summing up these aspects. Among the 21 (seven from each) selected activities of crop cultivation, livestock rearing and homestead plantation, it was found that the top participation of the *Saotal* farmers were use of modern seeds, cleaning cowshed and preparation of ideal pit respectively. In case of overall participation, highest proportion (60.41 percent) of the *Saotal* farmers had medium participation compared to 33.37 percent low and only 5.20 percent high. Among the 10 independent variables six namely educational qualification, farm size, agricultural training received, annual income, credit received and extension media exposure showed positive relationships with the dependent variable while other four namely age, cosmopolitaness, NGO participation and attitude towards NGO were not correlated significantly. The top three problems faced by the respondents in participating agricultural activities were attack of insect in trees, problem in training and pruning, and regular feeding of cattle, while the least problem was preparation of ideal pit.

*Keywords: Participation; Saotal farmers; agricultural activities and CARITAS.*

## 1. INTRODUCTION

### 1.1 General Background

Bangladesh is a very densely populated country with a population of about 150 million of which 1.2 million are tribal [1]. The overall economy of Bangladesh is not satisfactory. It is a low-income country, with per capita income of 848\$ in Fiscal Year 2012. Poverty persists at a very high level. About 40 percent of total population lives below national poverty line [2] and 25 percent of those are classified by governments as 'extremely poor' who cannot afford an adequate diet [3]. However, the ethnic minorities of the country are also living in poverty. The economic condition, political freedom, and the state of human rights are sharply different case of the *Saotal* people. There are about 45 tribes in Bangladesh among them Chakma, *Saotal*, Mog, Murung, Tipra, Kuki, Luci, Khashia, Garo, Hajong, Koach, Monipuri are important. Among the tribes in Bangladesh *Saotals* are lived at northern part of Bangladesh especially at Dinajpur district.

Most of the *Saotal* are belongs to poor and landless having limited opportunities. In Bangladesh, most of the *Saotal* farmers live in the remote areas. Lack of communication facilities, low level of skills and literacy contributes to low productivity. The government plays a leading role in their development due to centralized mode of operation and constricted resources. Since 1970, a remarkable emergence

of NGOs contributing effectively to participatory and grass root development have occurred.

CARITAS is one of the leading NGO in Bangladesh. It is a national level non-profit development organization established by the Catholic Bishops' Conference of Bangladesh to conduct activities of integrated social welfare and development. CARITAS was founded in 1967 and then the name was Christian Organization for Relief and Rehabilitation (CORR). During the liberation war of 1971, the relief and rehabilitation became indispensable through the countrywide, and after liberation, CARITAS had implemented 55 different projects. Later, it took up an ambitious reconstruction program for war victims. CORR was renamed as CARITAS in 1976.

The Integrated Community Development Projects (ICDP) of CARITAS aims to motivate and organize ethnic communities of greater Mymensingh, Dinajpur, Dhaka, Sylhet and Chittagong district for socio-economic development by means of human development through training, income generating activities, health and education. Other programs of CARITAS are rural infrastructure development programs, formation of credit unions, underprivileged children preparatory education programs, formation of children in orphanages, Formal Education Program (FEP), Training, Evaluation, Resources and Counseling (TERC), rehabilitation of drug addicts, and literacy & health care programs.

One of the major projects of CARITAS after 1976 was the Development Extension Education Services (DEEDS) for promoting non-formal education. Three other projects, the Integrated Women Development Program (IWDP), Integrated Human Development Project (IHDP), and Integrated Community Development Project (ICDP) were started later for different beneficiary groups. All these projects together form the core of CARITAS development activities. Mean while CARITAS had a significant contribution by introducing mini-irrigation in Bangladesh by using 'rower' and 'tara' hand tubewells and low-lift pumps as well as in social forestry, employment creation through sericulture, fisheries development, and sustainable environment management.

In the recent time CARITAS is operating several agricultural envelopment programs such as:

- i) Increasing production of crop
- ii) Increasing production of vegetables
- iii) Livestock and poultry rearing
- iv) Maintaining soil fertility
- v) Increasing fish production
- vi) Practicing bio-intensive gardening
- vii) Increasing forestland
- viii) Arranging training on compost making and manuring and setting up demonstration, and
- ix) Providing loans.

Participation refers to the extent of performing the development activities including crop development, livestock and poultry fish development, fish development, cottage industry etc. Participation in agricultural activities refers to active involvement of people to develop work plans, crop calendar and cropping system. Farmer means the principal decision maker involve in the management of a farm, not always be the head of the farm-household. *Saotal* is a racial group, especially one united by language and customs, living as a community under one or more chiefs.

This study was on the participation of the *Saotal* people dealing with the details of agricultural activities of CARITAS. Though the tribal people have been living along with the civilized people, they have some own culture in the participation of agricultural activities of the CARITAS. This study had a modest attempt to find out the suitable agricultural development activities so that they could adopt them quickly. The findings from the study may be helpful for NGOs,

governments and policy makers to design their agricultural activities in the development of tribal people of the country. This study may also used to conduct further studies on the tribal people.

In view of above facts, it is essential to have an understanding of participation in agricultural activities along with problem confrontation of ancient *Saotal* farmers in modern farming activities with the assistance of any organizational monitoring and supervision. Now-a-days, in Bangladesh there are many NGOs are involved in extension work along with DAE, and CARITAS is one of them especially in the study area. The researcher, therefore, decided to undertake a study entitled, "Participation of the *Saotal* farmers in agricultural activities of CARITAS in Dinajpur district".

The researcher gave an attentive observation on the life of *Saotal* farmers in the study area and their agricultural activities for several years. Numerous visits were made for interacting with farmers, leasers and extension officials. The findings were expected to be helpful to the CARITAS authority and different nation building departments to improve their strategy of action for meaningful agricultural development activities with the *Saotal* farmers.

## 1.2 Objectives of the Study

In view of the problems, stated above, the following objectives have been put forward for giving proper direction to the study:

- a) To describe selected characteristics of the *Saotal* farmers. The selected characteristics included: i) age, ii) educational qualification, iii) farm size, iv) agricultural training received, v) annual income, vi) credit received, vii) cosmopolitaness, viii) NGO participation, ix) extension communication exposure and x) attitude towards NGOs.
- b) To determine the extent of participation of the *Saotal* farmers in agricultural activities of CARITAS. The agricultural activities includes: i) crop cultivation, ii) livestock rearing and iii) homestead plantation.
- c) To explore the relationship between the selected characteristics of *Saotal* farmers and their participation in agricultural activities of CARITAS.
- d) To identify the problems faced by the *Saotal* farmers in agricultural activities of CARITAS.

## 2. METHODOLOGY

### 2.1 Locale of the Study, Population and Sample

Considering comprehensive participation of the *Saotal* farmers in agricultural activities of CARITAS, Biral upazila and Chirirbandar upazila under Dinajpur district were selected as locale of the study. Five villages namely Bisnopur, Borhanagor, Haljoy, Ragudevpur, and Bahbaldhighi of Ranipukur union and two villages namely Khozapur and Maguraban of Farrakaband union of Biral upazila, and two villages namely Baul and Mazina of Auliapukur union and one village namely durgadanga of Bhail union of Chirirbandar upazila were selected where the *Saotal* farmers live as well as involved in the CARITAS agricultural activities.

Multistage random sampling procedure was followed in this study. Dinajpur district was at first purposively selected. In the second stage four unions two from Biral upazila and two unions from Chirirbandar upazila which were Ranipukur, Farrakaband, Aulia pukur and Bhail were selected as purposive sampling, where *Saotal* farmers are lived and involved in the CARITAS agricultural activities. An updated list of 192 *Saotal* farmers of the study area was collected from CARITAS office record. The listed 192 *Saotal* farmers considered as population for the present study.

The selected *Saotal* farmers situated in ten villages which were Bisnopur, Borhanagor, Haljoy, Ragudevpur and Bahbaldhighi from Ranipukur union; Khozapur and Maguraban from Farrakaband union; Baul and Majina from Aulia pukur union; Durgadanga from Talpukur union. In the final stage a total of 96 *Saotal* farmers (50 percent of the sampling population) were selected as the sample of the present study following random sampling method. Due to the possibility of unavailability of the selected respondent, a reserve list 13 *Saotal* farmers was made to substitute the missing respondent in the original list.

### 2.2 Variables of the Study and Their Measurement

Ten characteristics of the *Saotal* farmers were selected as independent variables. The characteristics were age, educational qualification, agricultural training received, farm

size, annual income, credit received, cosmopolitaness, NGO participation, extension communication exposure and attitude towards NGOs and these have been operationalized as following the standard procedure of measurement.

Participation of the *Saotal* farmers in agricultural activities of CARITAS was the dependent variable of this study. A total of 21 selected items were constructed to measure each farmer's participation in the agricultural activities performed by CARITAS. The dependent variable consist of three major aspects of agriculture namely crop cultivation, livestock rearing and homestead plantation. The scale used for computing extent of participation of the *Saotal* farmers in agricultural activities of CARITAS were 0, 1, 2 and 3 for not at all, seldom, often and regular respectively. The score obtained by the *Saotal* farmer on a particular agricultural activity participation score, which could range from 0 to 63. Again, Agricultural Participation Index (API) was calculated by using the following formula:

$$API = N_{NP} \times 0 + N_{SP} \times 1 + N_{OP} \times 2 + N_{RP} \times 3$$

Where,

$N_{NP}$  = Total number of respondents expressed 'not at all' participation for an activity

$N_{SP}$  = Total number of respondents expressed 'seldom' participation for an activity

$N_{OP}$  = Total number of respondents expressed 'often' participation for an activity

$N_{RP}$  = Total number of respondents expressed 'regular' participation for an activity.

Thus, API could be ranged from 0 to 288 while 0 indicating no participation and 288 indicating regular participation. API on seven activities on each of the three aspects of participation and rank order were computed for each selected agricultural participation activity.

### 2.3 Measurement of Problem

The farmers were asked to give their opinion on 15 selected problems regarding the participation in agricultural activities of CARITAS. A four-point rating scale was used for computing the problem score of a respondent. For each problem, score of 0, 1, 2, and 3 was assigned to indicate extent of problem confrontation such as no problem, low

problem, medium problem and high problem respectively. The possible range scores of problems could be 0 to 45 while 0 indicating no problem and 45 indicating high problem faced by the *Saotal* farmers in participating agricultural activities of CARITAS. To ascertain the comparison among the problems, Problem Confrontation Index (PCI) was computed by using the following formula:

$$PCI = (F_n \times 0) + (F_l \times 1) + (F_m \times 2) + (F_h \times 3)$$

Where,

- $F_n$  = Frequency of the farmers having 'not at all' problem
- $F_l$  = Frequency of the farmers having 'low' problem
- $F_m$  = Frequency of the farmers having 'medium' problem
- $F_h$  = Frequency of the farmers having 'high' problem.

## 2.4 Data Collection, Processing and Analysis

Data were collected by the researcher himself using structured interview schedule through face-to-face contact. Researcher established desired rapport with the respondents before explaining the purpose of the research and collection of data. In order to minimize error, the information of the respondent was carefully recorded and duly checked. Collection of data was started on 1 September 2012 and completed on 15 October 2012. The collected data was compiled, tabulated, coded and analyzed for statistical analysis according to the objectives of the research. Descriptive statistics such as range, mean, number, percentage, standard deviation and rank order was used wherever necessary in describing the selected variables. Pearson's Product Moment Correlation Co-efficient ( $r$ ) was used to examine the relationships of independent variables of the *Saotal* farmers with their participation in agricultural activities of CARITAS (dependent variable). The softwares: Excels and SPSS were used to analyze the data.

## 3. RESULTS AND DISCUSSION

### 3.1 Selected Characteristics of the *Saotal* Farmers

Participation of the *Saotal* farmers in agricultural activities of CARITAS would vary according to

their various characteristics. The salient features of different characteristics have been presented in Table 1.

Data indicated that about fifty percent (47.9) of the *Saotal* farmers are young, 40.6 percent are middle and 11.5 percent are old aged. More than four-fifths (85.4 percent) of the respondents had primary education, 11.5 percent were illiterate and only 3.1 percent had secondary education. Data indicated that the 97.9 percent of *Saotal* farmers belonged to the landless category and a negligible portion 2.1 percent had marginal farm. The result indicates that most of the respondents were in the landless category. About four-fifths (78.1 percent) of *Saotal* farmer had no training, 17.7 percent had short duration training and only 4.2 percent had medium duration training. It may be due to the reason that CARITAS as well as other agencies does not provide sufficient for the *Saotal* farmers.

Among the selected farmers 58.3 percent of respondent had medium income, 28.1 percent had low income and 13.5 percent had high income. More than half (56.2 percent) of the *Saotal* farmer had no credit received, 32.3 percent had taken high credit, and only 11.5 percent had taken medium credit from different source. About half of the *Saotal* farmers (47.9 percent) of had medium cosmopolitaness while 30.2 percent having low and 21.8 percent having high cosmopolitaness. Similar finding was also reflected in the study of Muttaieb [4].

Highest proportion (88.5 percent) of the respondent had low participation, while 7.3 percent having medium participation and only (4.2 percent) had high participation. 39.6 percent of the *Saotal* farmers had medium communication exposure, 35.4 percent had low communication exposure and 25 percent had high extension communication exposure. Highest proportion (41.7 percent) of the *Saotal* farmers were moderately favorable attitude, 30.2 percent were less favorable and 28.1 percent highly favorable attitude towards NGO.

### 3.2 Participation of *Saotal* Farmer's in Agricultural Activities of CARITAS

The ways and means adopted for describing the findings on participation of *Saotal* farmers were frequency distribution of all activities for statistical measures and Agricultural Participation Index (API) in participants of the seven selected activities of individual aspects.

**Table 1. Distribution of the Saotal farmers according to their selected characteristics**

Characteristics	Scoring method	Range		Categories	Respondents		Mean	SD
		Possible	Observed		No.	%		
Age	No. of year	Unknown	21-65	Young(up to 35)	46	47.9	37.90	10.56
				Middle aged (36-50)	39	40.6		
				Old(>50)	11	11.5		
Educational qualification	Year of schooling	Unknown	0-8	Illiterate (0)	11	11.5	1.54	1.86
				Primary (1-5)	82	85.4		
				Secondary (≥6)	3	3.1		
Farm size	Decimal	Unknown	0.02-0.56	Landless (up to 0.50)	94	97.9	0.065	.073
				Marginal (>0.50)	2	2.1		
Agricultural training received	Day	Unknown	0-15	No training (0)	75	78.1	1.68	3.53
				Short duration training (1-10)	17	17.7		
				Medium duration training (≥11)	4	4.2		
Annual income	('000' Tk.)	Unknown	20-110	Low income (up to 33)	27	28.1	39.74	12.49
				Medium income (34-50)	56	58.3		
				High income (>50)	13	13.5		
Credit received	('000' Tk.)	Unknown	0-16	No amount recipient (0)	54	56.2	3.79	4.76
				Medium amount recipient (2-6)	11	11.5		
				High amount recipient (>6)	31	32.3		
Cosmopolitaness	Scores	Unknown	2-12	Low (up to 5)	29	30.2	6.45	2.36
				Medium (6-8)	46	47.9		
				High (>8)	21	21.8		
NGO participation	Scores	Unknown	1-5	Low (up to 1)	85	88.5	1.26	0.84
				Medium (2-3)	7	7.3		
				High (>3)	4	4.2		
Extension communication exposure	Scores	Unknown	2-18	Low (up to 6)	34	35.4	8.41	3.69
				Medium (7-10)	38	39.6		
				High (>10)	24	25		
Attitude towards NGOs	Scores	6-30	10-20	Less favorable (upto 15)	29	30.2	16.72	2.51
				Moderately favorable (16-18)	40	41.7		
				Highly favorable (>18)	27	28.1		

**Table 2. Distribution of the Saotal farmers in participating crop cultivation activities of CARITAS**

Sl. no.	Crop cultivation activities	Frequency of farmers				API	Rank order
		Not at all	Seldom	Often	Regular		
1.	Seed preservation	90	2	3	1	11	7 <sup>th</sup>
2.	Preparation of ideal seedbed	68	0	11	17	73	3 <sup>rd</sup>
3.	Application of organic manure	67	4	13	12	66	5 <sup>th</sup>
4.	Application of balanced fertilizer	69	10	15	2	46	6 <sup>th</sup>
5.	Follow up irrigation in paddy field	68	0	10	18	74	2 <sup>nd</sup>
6.	Control of insect pest in paddy field	66	3	16	11	68	4 <sup>th</sup>
7.	Use of modern seeds	68	0	5	23	79	1 <sup>st</sup>

### **3.2.1 Participation in crop cultivation activities**

This subsection deals with the findings of participation of *Saotal* farmers in seven selected activities of crop cultivation.

The API values of each of the crop cultivation activities ranged from 11 to 79 against the possible range of 0 to 288. The findings show that the participation in crop cultivation activities of the *Saotal* farmers varied largely. The highest portion of the *Saotal* farmers' participated activities was use of modern seeds followed by follow up irrigation in paddy field, preparation of ideal seedbed and so on. The least participated activity was seed preservation (Table 2).

### **3.2.2 Participation in livestock rearing activities**

The farmers were classified into four categories such as not at all, seldom, often and regular. In order to obtain rank order API index were computed against each of the livestock rearing activities. The API values of each of the livestock rearing activities ranged from 60 to 183 against the possible range of 0 to 288 (Table 3).

The *Saotal* farmers had highest participation in cleaning cowshed followed by washing cattle, feeding granular feed and so forth. The least participated activities were vaccination of poultry. The *Saotal* farmer hardly keep contact with outside agencies and remain confined themselves without much mobility. Unless the farmers visit and meet, it is difficult to get any kind of service from the livestock officials working at upazila. Therefore, the DLS should provide special attention in livestock rearing of *Saotal* farmers.

### **3.2.3 Participation in homestead plantation activities**

The farmers were also categorized into four and API index were calculated just like livestock rearing. The API values of each of the homestead plantation activities ranged from 52 to 252 against the possible range of 0 to 288 (Table 4).

The findings indicated that the respondents had highest participation on preparation of ideal pit followed by timely plantation of sapling, application of manures in pit and so on. The least participated activities were application of insecticide.

**Table 3. Distribution of *Saotal* farmers in participating livestock rearing activities of CARITAS**

Sl. no.	Livestock rearing activities	Percentage of farmers				API	Rank order
		Not at all	Seldom	Often	Regular		
1.	Artificial insemination	47	37	9	3	64	5 <sup>th</sup>
2.	Feeding granular feed	29	14	44	9	129	3 <sup>rd</sup>
3.	Cleaning cowshed	29	4	10	53	183	1 <sup>st</sup>
4.	Washing cattle	29	7	20	40	167	2 <sup>nd</sup>
5.	Vaccination of poultry	65	13	5	13	62	7 <sup>th</sup>
6.	Vaccination of cattle	37	24	24	11	105	4 <sup>th</sup>
7.	Feeding balanced diet to the poultry	42	45	9	0	63	6 <sup>th</sup>

**Table 4. Distribution of *Saotal* farmers in participating homestead plantation activities of CARITAS**

Sl. no.	Homestead plantation	Frequency of farmers				API	Rank order
		Not at all	Seldom	Often	Regular		
1.	Preparation of ideal pit	2	6	18	70	252	1 <sup>st</sup>
2.	Application of manures in pit	4	15	34	43	212	3 <sup>rd</sup>
3.	Timely plantation of saplings	4	4	55	33	213	2 <sup>nd</sup>
4.	Timely irrigation	6	22	44	24	182	4 <sup>th</sup>
5.	Application of fertilizer	14	66	16	0	98	5 <sup>th</sup>
6.	Application of insecticides	58	27	8	3	52	7 <sup>th</sup>
7.	Training and pruning	40	43	12	1	70	6 <sup>th</sup>

**3.2.4 Overall agricultural participation of Saotal farmers**

Participation of the Saotal farmers in agricultural activities was also examined on the basis of their overall participation in agricultural activities scores. The scores of participation of the Saotal farmers in agricultural activities ranged from 0 to 49, against a possible score of 0 to 63. The mean and standard deviation were 22.48 and 12.20 respectively. Based on total scores, the Saotal farmers were classified into three categories namely low participation (up to 16), medium participation (17-29) and high participation (>29).

The highest proportion (60.41 percent) of the Saotal farmers had medium participation compared to 33.37 percent low and only 5.20 percent high. The findings revealed that 93.78 percent of the Saotal farmers had medium to low participation (Table 5).

The probable reason was the orientation of modern technology in agricultural activities by CARITAS and other extension service providers. Therefore, it can be said that the agricultural activities of CARITAS were satisfactory. Saotal farmers are active, physically able to do agricultural activities. But these potential farmers have little extension advisors and hence updated

technology remain unavailable to them. Activities and crop yields would increase significantly at adoption of the modern technology in crop cultivation, livestock rearing and homestead plantation. The study has similarities with Rashid, 2006 [5].

**3.3 Relationships between Selected Characteristics of the Saotal Farmers' and their Participation in Agricultural Activities of CARITAS**

In the present study ten personal characteristics of the Saotal, farmers' have been considered to explore the relationship between dependent and independent variables and correlation coefficient (r) was used for this purpose (Table 6).

The research revealed that educational qualification, farm size, agricultural training received, annual income, credit received and extension communication exposure has positive significant relationship while age and cosmopolitaness negatively correlated with participation of the Saotal farmers in agricultural activities of CARITAS. NGO participation and attitude towards NGO had no significant relationship with Participation of the Saotal farmers in agricultural activities of CARITAS.

**Table 5. Distribution of the respondents according to their participation of agricultural activities of CARITAS**

Categories	Respondents		Observed range	Mean	SD
	Number	Percent			
Low participation (up to 16)	33	33.37	0-49	22.48	12.20
Medium participation (17-29)	58	60.41			
High participation (>29)	5	5.20			
Total	96	100.00			

**Table 6. Relationships between the dependent and independent variables**

Dependent variable	Independent variables	Computed values of 'r' with 94 df.	Tabulated value of 'r'	
			0.05 level	0.01 level
Participation of the Saotal farmers in agricultural activities of CARITAS	Age	-0.013		
	Educational qualification	0.346**	±1.986	±2.630
	Farm size	0.217*		
	Agricultural training received	0.288**		
	Annual income	0.352**		
	Credit received	0.435**		
	Cosmopolitaness	-0.018		
	NGO participation	0.172		
	Extension communication exposure	0.570**		
	Attitude towards NGO	0.006		

\*Correlation is significant at the 0.05 level and \*\* Correlation is significant at the 0.01 level



**Table 7. Rank order of problem faced by the *Saotal* farmers in agricultural activities of CARITAS**

Sl. no.	Problems	Extent of the problem citation				PCI	Rank
		Not at all	Low	Medium	Extreme		
1.	Lack of extension facilities	69	9	17	1	46	7
2.	Lack of agricultural training	73	9	11	3	40	9
3.	Attack of insect in crop field	70	20	6	0	32	11
4.	Unavailability of credit in time	73	17	4	2	31	12
5.	Insufficient knowledge about balanced fertilizer	71	17	7	1	34	10
6.	Lack of modern seeds	92	3	1	0	5	13
7.	Lack of knowledge about ideal seedbed	91	3	1	1	8	14
8.	Lack of regular vaccination of cattle	53	36	6	0	48	6
9.	Lack of granular feed for cattle	45	39	11	1	64	4
10.	Lack of seeds for artificial breeding	50	36	10	0	56	5
11.	Problem in regular feeding of cattle	35	41	19	1	82	3
12.	Application of insecticide	12	59	24	1	110	1
13.	Problem in training and pruning	34	43	16	3	84	2
14.	Lack of vigor sapling	53	42	1	0	44	8
15.	Preparation of ideal pit	93	3	0	0	3	15

### 3.4 Problems Confrontation by *Saotal* Farmers in Implementing CARITAS Program

The Problem Confrontation Index (PCI) of total 15 problems was developed related to field crop, livestock rearing and homestead plantation.

The total PCI ranged from 3 to 110 with possible range of 0 to 288. The top five problems were attack of insect in trees, problem in training and pruning, problem in regular feeding of cattle, lack of granular feed for cattle and lack of seeds for artificial breeding. The least problem was preparation of ideal pit (Table 7).

## 4. CONCLUSION AND RECOMMENDATIONS

### 4.1 Conclusion

The findings indicate that 39.6 percent of the *Saotal* farmers had medium communication exposure, 35.4 percent had low communication exposure and 25 percent had high extension communication exposure. Therefore, it may be recommended that there needs an increase in the efficiency of the available and close communication channels by providing training for dissemination of agricultural information of the *Saotal* farmers. The highest proportion (60.41percent) of the *Saotal* farmers had medium participation compared to 33.37 percent low and only 5.20 percent high participation in agricultural activities. The probable reason was the

orientation of modern technology in agricultural activities by CARITAS. Therefore, it may be concluded that there is further scope to increase participation of *Saotal* farmers in agricultural development activities of CARITAS. The findings promote the researcher to conclude that certain characteristics of the *Saotal* farmers play an important role in their application in agricultural activities. *Saotal* farmers will continue to face considerable problems in agricultural activities unless steps are taken to identify different kinds of problems in various aspects and action taken to remove or minimize them.

### 4.2 Recommendations

CARITAS need to organize the agricultural development activities in a systematic manner and to involve the maximum beneficiaries in the profitable and sustainable agricultural development activities. *Saotal* farmer having small homestead size need to be motivated and to be skilled so that they could solve their problems and increase productivity. There is a need for gearing up training program to bridge up the literacy gap. Concerned authority should explore the agricultural activities, which would be suitable and more profitable. In this context sericulture, pig rearing could be a viable supplement enterprise for economic development.

### COMPETING INTERESTS

Authors have declared that no competing interests exist.

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