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Full Length Research

Socio-economic characteristics of farming households and asset ownership of households in the PROSAB and non PROSAB project areas in southern Borno State, Nigeria

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The broad objective of this study is to determine the socio-economic characteristics of respondents in the PROSAB and non-PROSAB study area. The study was undertaken in Southern Borno State comprising of Biu LGA, Hawul LGA and Kwaya Kusar LGA. A multistage sampling technique which involved different procedures was employed and a total of 180 farming households from the area were served with questionnaires. Primary Data for the study was collected using questionnaires. Similarly, Bayo LGA and Shani LGA in the non project area were studied. The analytical technique employed includes the use of descriptive statistics and t-test. Result of the finding showed that analysis of the gender of household heads had over 71% of the respondents in each of the two groups of farmers studied to be males. The result of the analysis of the age of household heads in showed that the mean age of PROSAB farmers' was 45 years while that of non-PROSAB farmers was 42. About 64% of PROSAB farmers were below 50 years old and nearly 74% of the non-PROSAB farmers were below 50 years. Result of analysis of farming size of households presented also showed that the mean family size of PROSAB farmers was found to be 7.5 per household while that of non-PROSAB farmers was found to be 6.7 per household. Result analysis of Household ownership of various assets were Bicycles with (16.4%) among PROSAB farmers and (14.1%) among the non-PROSAB farmers. It was recommended that in the future as was the case in the PROSAB project, careful and targeted selection of beneficiaries was required when development projects are to be established. It is also recommended that due to the low literacy levels of the farmers, the basic education lessons can be combined with basic agricultural training.

Key words: Socio-economic characteristics, asset ownership, PROSAB project, Borno State, Nigeria.

INTRODUCTION

Agriculture is the dominant occupation of rural Nigerians and it is mainly practiced under rain fed condition. It constitutes a significant sector of Nigeria's economy and has contributed immensely to its economic development. It plays an important role in the economic development of Nigeria. It provides food for the growing population, employment for over 65% of the population, raw materials and foreign exchange earnings for the development of the industrial sector and generation of household incomes for farmers (Kwaghe, 2006; Amaza,

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2000).

The concern of the Federal Government of Nigeria over conceptualization and implementation of the Promoting Sustainable Agriculture project in southern Borno State, Nigeria (PROSAB) from 2004-2009. The beneficiaries were the rural households. The goal of the project was to improve rural livelihoods in the project area. The specific objectives were to improve food security, reduce environmental degradation and improve sustainable food production through the transfer of improved agricultural technologies and management practices to female as well as male farmers. It is pertinent therefore to examine the socio-economic characteristics of these households, understand their livelihoods and assess their asset ownership and compare these with those of the households in the non project area.

The age of a farmer determines the quality and quantity of work that can be done on the farm. Age is, therefore, an important measure of farm productivity. Babatunde *et al*. (2007) in Adebayo (2011) found that the older the household head, the lower the probability that the household would be food secure. Dercon and Krishman, (1996) in PROSAB (2004) found that age affects the rate of household adoption of new technologies, which, in turn, affects household livelihood strategies. This age range is for farmers' who are active and productive. The implication is, at these mean ages, given adequate resources, the farmers have the potential to maximize their farm output.

As Adebayo (2011) posited; in subsistence agriculture as practiced in the study area, household size is very important as it determines to a large extent the supply of labour to the farm. However, where a sizable percentage of the family members are children and the elderly, a large family size may be of little or no advantage to the household on the farm. Amaza *et al*. (2009) stated that "the significance of household size in agriculture hinges on the fact that the availability of labour for farm production, the total area cultivated to different crop enterprises, the amount of farm produce retained for domestic consumption, and the marketable surplus are all determined by the size of the farm household". While this is true only if members of the household partake in the family farm business, a large household with many members could get involved in other livelihoods which could be sources of wealth to aid the family with income which could be used to purchase farm inputs for farm production, purchase food or payment of children school fees or meet some other family needs.

According to Musa (2009) the implication of the result of a large family size is in the fact that farmers have more hands to be employed for labour because of the number of the working persons in the family. According to Adebayo (2011), in subsistence agriculture as practiced in the study area, household size is very important as it determines to a large extent the supply of labour to the farm. However, large households with many dependants children and the elderly could be of little or no advantage to the farming household. According to Simonyan (2009) the size of a household is an important factor in traditional agriculture because it influences to a large extent the supply of labour for immediate farm employment. Furthermore, according to Adebayo (2011) the larger the size of a household, the higher the probability of being food secure.

METHODOLOGY

The study area

The study area is the project area in southern Borno State comprising of Damboa Local Government Area (LGA), Biu Local Government Area (LGA), Hawul Local Government Area (LGA) and Kwaya Kusar Local Government Area (LGA). The population of the study area is projected to be about 2.21 million from the 1.92 million in the 2006 census figure (NPC, 2006).

The project area covers 39 communities located in three agro ecological zones located between latitude 10° and 12° north of the equator and longitude 11°30′ and 14° east. Numerous ethnic groups and cultures characterize the area, with approximately 80% of the population being small-scale farmers. Agriculture and trading constitute the major economic activities of the area (BOSADP, 1998 in Amaza *et al*., 2004).

Sampling procedure/Sample size

Three of the four LGAs under the project area were randomly selected for data collection. The three LGAs were selected at random to include Biu, Hawul and Kwaya Kusar LGAs. The sampling frame was the 39 communities in which the project was implemented and which were spread across four LGAs in the project area. Two communities from the list of communities in the LGA were selected by random sampling technique in each of the three LGAs. In each of the selected communities, a random selection of 20 households was carried out from the list of households in the community resulting in a total of 180 farming households from the project area were studied.

Non-project participants were equally selected in similar manner for this study. Of the four adjoining LGAs, two were selected at random for the study. That is, the non-project participants were drawn from the two adjoining LGAs of Shani, and Bayo. These non-project LGAs served as my counterfactuals.

The selection of non-project participants was done using similar procedures as earlier discussed. Four communities were selected at random from the list of

communities in each of the two LGAs studied. In each of the four communities, 20 households were selected at random in two of the communities and 25 households were selected in the other two communities based on the population of the four communities. That is, a total of 90 households of the non- project participants were studied in each of the two LGAs making a total of 180 farming households.

Data collection

Primary data was used for this study. The primary data was generated from farmers through the use of a questionnaire and oral interview which was administered by trained enumerators under the supervision of the researcher. The data covered household demographic characteristics in terms of gender of household head, household size, age of household head, and level of education of household head, the level of food self-sufficiency of the household; total household farm size, access to agricultural extension services, etc. Primary data on vulnerability factors such as the level of valuable and disposable assets owned by a household was also collected from the farmers in the project area as well as in the non project area.

Secondary data was also used in the study which was generated from publications and records of the project. Most importantly, secondary data on the socio-economic baseline data and the livelihood data of the project area was used.

Analytical techniques

Descriptive statistics

Descriptive statistics such as mean, variance, frequency distribution and percentages were computed and used. Similarly, the use of the t table was also employed. The frequency distribution and percentages were used to show the occurrence of given sample characteristics.

The t-test was used to test whether the mean values between the two groups of farmers was significant or not. This was done by providing null and alternative hypotheses. The hypothesis was stated in a statistical form as:

Null hypothesis: $H_O: \bar{X}_1 = \bar{X}_2$ **(1)**

Alternative hypothesis: $H_A: \bar{X}_1 \neq \bar{X}_2 \ldots$ **(2)**

Where $\bar{X}_1$ and $\bar{X}_2$ represent the sample means of the two groups of farmers in respect to any socio economic characteristic of the two groups of farmers.

The t-values were calculated using the formular in Equation 3. Whereas the table values were obtained from the table by adding the two samples n_1 and n_2 and subtracting 2 to obtain the degrees of freedom; the calculated values and table t-values were compared. Where the calculated value was less than the table value, the null hypothesis was rejected and the alternative hypothesis accepted. That is, the difference between the two means was then said to be significant.

$$t = \frac{\left(/\overline{X} - \overline{X}\,/\right)}{\frac{\sqrt{(n_1)S_1^2 + (n_2 - 1)S^2}}{n_1 + n_2 - 2} - \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}}. \quad (3)$$

Where

$$S_1^2 = \left(\frac{X - \overline{X}_1}{n_1}\right)^2. \quad (4)$$

$$S_1^2 = \left(\frac{X - \overline{X}_2}{n_2}\right)^2 \quad (5)$$

n_1, n_2 represent the two sample sizes

$\overline{X}_1$, $\overline{X}_2$ represent the means of the two samples selected

According to Frank and Aithoen (1994) the paired t – statistics is often used to test differences between two populations exposed to different treatments.

RESULTS AND DISCUSSION

Gender of household heads

The result of the analysis of the gender of household heads shows that over 71% of the respondents in each of the two groups of farmers studied were male. The proportion of female headed households among non-PROSAB farmers was lower (14.4%) than that of female headed households among the PROSAB farmers which was 28.9%. This finding is similar to that of Amaza *et al.* (2007) who found an average of 76% of male headed households. A similar study in the area excluding the non-PROSAB farmers in 2009 found an average of 85.5% of male headed households (Amaza *et al.*, 2009).

According to PROSAB (2004) the relationship between the food security status of a household and the gender of the head of the household cannot be determined a priori. This is because while several studies have revealed that

Table 1. Distribution of Household Heads by Age in 2010.

Age (Years)	PROSAB Farmers		Non-PROSAB Farmers	
	Frequency	Percent	Frequency	Percent
10-19	0	0	1	0.6
20-29	20	11.1	15	8.3
30-39	41	22.8	67	38.9
40-49	54	30.0	47	26.1
50-59	36	20.0	30	16.7
60-69	22	12.2	13	7.2
70+	7	3.9	4	2.2
Total	**180**	**100.0**	**180**	**100.0**
Mean age (years)	45.40		42.10	
Variance	159.24		122.78	

Source: Field Survey Data, 2010

female – headed households are likely to be food insecure than male – headed households (Makinde, 2001), others have found that male – headed households are better off (Amaza, 2009; PROSAB, 2004).

Age of household heads

The result of the analysis of the age of household heads presented in Table 1 shows that the mean age of PROSAB farmers was 45 years while, that of non PROSAB farmers was 42. Nearly 64% of PROSAB farmers were below 50 years old and nearly 74% of the non- PROSAB farmers were below 50 years.

According to Amaza *et al*. (2009) the significance of age on farm output has been examined extensively by Rongoor *et al*. (1988) where it was found that the influence of age on farm productivity was very diverse. For example, Kalirajan and Shand (1985), Stefanou and Sexena (1988) found that age has a positive effect on productivity. Similarly, Adubi (1992) showed that age in correlation with farming experience, has a significant influence on the decision making process of farmers with respect to risk aversion, adoption of improved agricultural technologies, and other production related decisions. Age has been found to determine how active and productive the head of the household would be. Amaza *et al.* (2009) concluded that the predominance of active and productive heads of households in the project area has a direct bearing on (1) increased availability of able bodied labour for primary production, (2) ease of adoption of innovations; and (3) reduction in the degree of risk-aversion. All these have great potential for increasing agricultural productivity and production and, hence, for improving household livelihoods and reducing poverty in the PROSAB project area.

The mean age of PROSAB and non- PROSAB farmers were used to conduct the t-test of significance relating to whether there is significant difference between the two ages of the different groups or not. In view of the fact that the t calculated was 1.50 which is less than the t-table which is 1.80 i.e. (1.50 < 1.80), the null hypothesis is rejected and we conclude that there is significant difference in the ages of the household heads of PROSAB and non PROSAB farmers.

Family size of households

The result of analysis of family size of households presented in Table 2 shows that the mean family size of PROSAB farmers was found to be 7 per household, while that of non-PROSAB farmers was found to be 8 per household.

The significance of household size in agriculture hinges on the fact that the availability of labour for farm production, the total area cultivated to different crop enterprises, the amount of farm produce retained for domestic consumption, and the marketable surplus are all determined by the size of the household.

The implication of the family size is that where a majority of the family members can be productively used on the farm, this will most likely increase the possibility of the household being food secure. On the other hand, members of the household are involved in some other productive ventures where they earn income; as such, such income can be applied towards buying food which also make the family more food secure. If, however, a large family size is not used on the farm or some other productive employment, it may likely cause the household to be food insecure. Another implication of the finding is that households may have to supplement most of their farm family labour with hired labour.

The t calculated is 1.40, while the t table is 1.32.

Table 2. Distribution of family size of households.

Family size	PROSAB Famers		Non PROSAB Farmers	
	Frequency	Percent	Frequency	Percent
1-5	33	18.3	48	26.7
6-10	94	52.2	102	56.6
11-15	49	27.2	27	15.0
16-20	3	1.7	2	1.1
21+	1	0.6	1	0.6
Total	**180**	**100.0**	**180**	**100.0**
Mean	8		**7**	
Variance	11.03		9.36	

Source: Field Survey Data, 2010

Table 3. Distribution of household heads by years of schooling in 2010.

Years of Schooling	PROSAB Farmers		Non PROSAB Farmers	
	Frequency	Percent	Frequency	Percent
0	51	28.3	46	25.6
1-6	60	33.3	59	32.8
7-12	37	20.6	43	23.9
13-18	32	17.8	32	17.7
Total	**180**	**100.0**	**180**	**100.0**

Source: Field Survey Data, 2010

Therefore, since the t calculated 1.40 > the t table (1.32), we therefore accept the null hypothesis and reject the alternative hypothesis which states that there is no significant difference between the family size of the two groups of farmers.

Years of schooling

The result of analysis of years of schooling of household heads as presented in Table 3 shows that 28.3% of PROSAB farmers had zero (0) years of schooling and nearly 26% of non-PROSAB farmers also had zero (0) years of schooling. On the other hand, while nearly 33% of PROSAB farmers had less than 6 years of schooling, nearly 32% of non-PROSAB farmers had less than 6 years of schooling. The implication of this finding is that the farmers' levels of education or year of schooling is believed to influence the use of improved technology in agriculture, and hence farm productivity. The years of schooling determines the level of opportunities available to improve livelihood strategies, enhance food security, and reduce level of poverty. It affects the level of exposure to new ideas and managerial capacity in production and the perception of the household members on how to adopt and integrate innovations into the household's survival strategies. Adebayo (2011) agrees with this assertion when he stated that education would assist the farmers to accept and test innovations available to them. It would also enhance the ability to make informed and accurate decisions on management of the farm. According to National Bureau of Statistics (NBS) (2007) in Adebayo (2011) the implication of lack of education by a farmer is that such a household is more likely to be poorer than average and by extension, food insecure.

Household heads who lacked formal education as shown in our finding were 28.3% of PROSAB farmers and 25.6% of non-PROSAB farmers which have implication in the farmer's ability to understanding some logistics of farm management which would obviously be low compared to those that have formal education. Based on the aforementioned, the need for education in agricultural production is very important and cannot be over emphasized. This was why Imonikhe (2004) in Musa (2011) was of the opinion that education would significantly enhance a farmer's ability to make meaningful management decisions. It could also enhance knowledge of improved methods of farming such as how to react and interpret recommended packages and even use them

Table 4. Distribution of years of farming experience of household heads in 2010

Years of Experience	PROSAB Farmers		Non-PROSAB Farmers	
	Frequency	Percent	Frequency	Percent
0-9	9	5.0	28	15.6
10-19	67	37.2	64	35.5
20-29	48	26.7	46	25.6
30-39	33	18.3	29	16.1
40-49	18	10.0	10	5.5
50-59	2	1.1	2	1.1
60-69	2	1.1	1	0.6
70+	1	0.6	0	0
Total	**180**	**100.0**	**180**	**100.0**
Mean	23.29		20.25	
Variance	147.70379		122.01	

Source: Field Survey Data, 2010

Table 5. Farm size in hectares (Ha) of households in 2010.

Farm size (Ha)	PROSAB Farmers		Non PROSAB Farmers	
	Frequency	Percent	Frequency	Percent
0.1-2	49	27.2	142	78.9
2.1-4	102	56.7	36	20.0
4.1-6	20	11.1	2	1.1
6.1-8	6	3.3	0	0.0
8+	3	1.7	0	0.0
Mean (Ha)	2.8		1.3	
Variance (Ha)	3.2		0.5	

Source: Field Survey Data, 2010

etc.

Years of farming experience of household heads

The result of the analysis of years of farming experience of household heads in Table 4 shows that the mean years of farming experience of PROSAB farmers was 23.3 years while that of non-PROSAB farmers was 20.3years. The number of years of farming experience of 10-19years was higher for both groups of farmers. For example, while the PROSAB farmers had 37.2% of the farmers within that range; in the case of non-PROSAB farmers, 35.5% of the farmers fell within this range. According to Amaza *et al*. (2009) farming experience is an important factor determining both the productivity and the production level in farming. They posited that the effect of farming experience on productivity and production may be positive or negative. Generally, it would appear that up to a certain number of years, farming experience would have a positive effect. After that, the effect may become negative. The negative effect may be derived from aging or reluctance to change from old and familiar practices and techniques to those that are modern and improved. Adebayo (2011) agrees with this when he stated that years of experience in farming has great influence on production, storage and marketing of farm output because it is an indication of the farmer's expertise in farming.

The t calculated was found to be 1.15 while the t table was found to be 1.18. Therefore, since the t calculated (1.15) < t table (1.18), the null hypothesis is rejected and the difference in the years of farming experience between the two groups is significant.

Farm size

The result of the analysis on farm size of households in Table 5 shows that the majority of PROSAB farmers (32.8%) had farm size of 2-2.9 hectares (Ha), however, in the case of non-PROSAB farmers, the majority of the farmers (78.9%) had farm size of 1.0-1.9 Ha. The mean farm holding was 2.8 Ha and 1.3 Ha among PROSAB

Table 6. Primary Occupations of Household Heads in 2010.

Primary occupation	PROSAB Farmers		Non-PROSAB Farmers	
	Frequency	Percent	Frequency	Percent
None	1	0.6	2	1.1
Farming	152	84.4	106	58.9
Government salaried job	23	12.8	48	26.7
Private salaried job	1	0.6	11	6.1
Crafts and artisans	0	0.0	3	1.7
Trading	3	1.7	3	1.7
Others	0	0.0	6	3.3
Total	**180**	**100.0**	**180**	**100.0**

Source: Field Survey Data, 2010

farmers and non-PROSAB farmers respectively. 83.9% of PROSAB farmers indicated that they had farm sizes of 0.1-3.9 Ha, as against 98.9% of non-PROSAB farmers who indicated that they had farm sizes of 0.1-3.9 Ha also. This implies that most of the farmers are small scaled. Small farm size impedes productivity, crop diversification and consequently, the food security status of farm households. The disparity between the minimum and the maximum farm sizes is quite large in the case of PROSAB farmers with a minimum farm size of 0.5 Ha and a maximum farm size of 51Ha as against non-PROSAB farmers with a minimum farm size of 1 Ha and a maximum farm size of 5 Ha.

According to Imonikhe (2004) in Adebayo (2011), farm size is an important fixed factor in agricultural production. This is because it determines to a large extent the level of agricultural production. The size of the farm cultivated by a farmer is a function of population pressure, family size, labour availability and experience of the farmers. Some other factors like availability of factors of production like farm inputs, farm credit, remittances received/money available to pay for hired labour will determine the farm size cultivated at any particular time.

The t calculated (5.30) > t table at 0.05 which is (2.30), we accept the null hypothesis and instead reject the alternative hypothesis that the differences in the farm sizes in the two groups is significant.

Occupation of household heads

The result of analysis of occupations of household heads is shown in Table 6. Majority (84.4%) of PROSAB farmers indicated farming as their primary occupation while among the non-PROSAB farmers nearly 59% of the farmers indicated farming as their primary occupation. The other primary occupations in order of importance were government salaried jobs (12.8%) among PROSAB farmers and 26.7% of non-PROSAB farmers. Only an insignificant 0.6% of PROSAB farmers had no primary occupation and 1.1% of non-PROSAB farmers. Based on these findings, more PROSAB farmers depended on farming as a means of livelihood than non-PROSAB farmers. This finding justifies the decision to implement the project which was targeted at enhancing agricultural production among farmers in the area.

This finding has an important implication for farm production decisions by the households. The dependence of farm families on farming as the predominant occupation may have a positive or negative effect on agricultural production depending on the availability and allocation of household resources. The diversification of primary occupations among non-PROSAB farmers was found to be higher than among PROSAB farmers. This was because most of the non-PROSAB households had more occupations than PROSAB households in 2010.

This finding was similar to the finding of Ellis (1998) in Nasai (2008) who pointed out, “that the rural poor have developed capacity to cope with increasing vulnerability associated with agricultural production – diversification, intensification and migration or moving out of farming. Diversification as a strategy involves the attempt by individuals and households to find new ways to raise income and reduce environmental risk.” Ellis (1998); Hussein and Nelson (1998) in Nasai (2008) stated that it is evident that rural households in Nigeria engage in multiple activities as trading (marketing or adding value to commodities), small scale business enterprises (carpentry, radio and bicycle repairs), processing of agricultural goods and arts and crafts (weaving, mats and basket making) in order to supplement earnings from agriculture. The implication of diversification in the present finding is that in the event of any challenge with agriculture; non-PROSAB farmers would most likely cope better than PROSAB farmers.

Ownership of household’s assets

Table 7 shows households’ ownership of various assets.

Table 7. Households Asset Ownership in 2010.

Asset	PROSAB Farmers		Non-PROSAB Farmers	
	Frequency	Percent	Frequency	Percent
Land	56	7.0	49	7.7
Car/pick-up van	35	4.3	22	3.5
Motorcycle	77	9.6	67	10.5
Bicycle	132	16.4	91	14.3
Ox-plough, ox-ridger, ox- harrow	21	2.6	20	3.1
Work bull	66	8.2	50	7.8
House (new)	49	6.1	38	6.0
House (renovated)	73	9.1	47	7.4
Sewing machine	89	11.1	90	14.1
Bank account	24	3.0	26	4.1
Livestock	78	9.7	77	12.1
Others	104	12.9	60	9.4
Total	**804**	**100.0**	**637**	**100.0**

Source: Field Survey Data, 2010

Bicycles were the most common asset among PROSAB farmers (16.4%) and among non-PROSAB farmers (14.1%).

According to Hassan and Babu (1991) assets ownership by the household measures its endowments and provides a good measure of livelihood resilience in times of food crisis resulting from famine, crop failures or natural disasters. According to them, it is believed that the household can easily fall back on these assets in times of need by outright sales of these assets or by leasing them.

Similarly, according to Bender and Hunt (1991) and Barney and William (1994) the level of valuable, disposable assets owned by a household is regarded as a factor determining the degree or vulnerability of the household to food insecurity, poverty incidence, and poverty intensity. This is because these disposable assets can be sold in times of need and, to that extent, constitutes a determinant of the probability of a household being food insecure or poor. These assets could also serve as a measure of household wealth and, hence, the level of their possessions is expected to have a negative relationship with poverty status. That is, given other factors, the higher the value of disposable household assets possessed, the lower the probability of household food insecurity and poverty, and vice versa.

Summary of findings

Nearly 71% of PROSAB households were of the male gender as against 85.6% of the non- PROSAB households. The mean age among PROSAB households was 45.4 years and 42.1 years among non-PROSAB households. Nearly 28.3% and 25.6% of PROSAB farmers and non-PROSAB farmers had no formal education. The mean number of years of farming experience was found to be 23.3 years among PROSAB households and 20.25 years among non PROSAB households. This was found to be significant. The mean family size was 7.5 and 6.7 among PROSAB and non-PROSAB farmers respectively.

Nearly 84.4% of PROSAB households as against 58.9% of non-PROSAB households had agriculture as primary occupation. Similarly, agriculture was the major secondary occupation among PROSAB as well non-PROSAB households by 15% and 30% respectively. Bicycles were the most common assets owned by both groups of households followed by sewing machines and livestock.

Conclusion

The study revealed that greater number of households had agriculture as their primary occupation among the PROSAB households when compared to the non-PROSAB households. This justifies the huge investment by the Canadian government and Borno State Government of Nigeria. Based on the assertion by Hassan and Babu (1991), assets ownership by a household is a measure of its endowments and provides a good measure of livelihood resilience in times of food crisis since these can easily be a fall back. Therefore, PROSAB farmers with higher number of assets would most likely better cope with food crisis than non-PROSAB farmers.

Recommendations

As was the case of the PROSAB project, careful and targeted selection of beneficiaries are required when

development projects are to be established so that such projects can meet the need of the targeted beneficiaries.

Considering the fact that nearly 28% of PROSAB households and nearly 26% of non PROSAB households never had any formal education, the state agency responsible for adult literacy should consider providing basic education training to the farmers in view of the fact that the level of education attained by a farmer helps to determine whether a household can be food secure or not. The basic education lessons can be combined with basic agricultural training. The improvement in the education of the households will help to improve the household's ability to be food secure.

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