

Socio-economic and Livelihood Features of French bean Growers: Evidence from Kiphire District, Nagaland

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Paper Received on October 10, 2020, Accepted on December 20, 2020 and Published Online on January 01, 2021

ABSTRACT

The present study was conducted to characterize the socio-economic features of the French bean growers and their different livelihood activities under Kiphire district, Nagaland. For the study, two blocks, and three villages from each block were purposively selected. A total of 120 French bean growers with a minimum of 3 years of experience of French bean cultivation were selected as respondents for the study (20 respondents from each village). In the study area, majority of the French bean growers were lower medium age group and had education up to primary level. Comparison between the two blocks in respect of experience in French bean cultivation, size of land holdings, and land allocation under French bean cultivation showed that growers from Kiphire block had the higher experience, the larger size of land holdings and larger size of land allocation under French bean cultivation. The study showed that French bean cultivation contributed the highest in total annual income (i.e., 46.74%), followed by livestock-based (37.44%), other crop-based (11.06%), off-farm activities (3.23%) and forest-based livelihood activities (1.52%), respectively. Comparison between the average income of respondents from French bean of two blocks showed significant difference.

Key words: socio-economic; Income; French bean; Livelihood; Livelihood features; Nagaland;

The term socio deals with the behaviour of the people, their family structure, their social structure, and their social interactions. A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living (Chambers and Conway, 1991). To study the livelihood of people, it is imperative to first have a complete understanding of the socio-economic perspective of the people. Hence, characterization of socio-economic features may pave a way to a better understanding of the different livelihood activities carried out as a means of living.

The state, Nagaland is predominantly rural where the majority of the people living in villages (82.26%). Agriculture plays a major role in the livelihood of the people where French bean cultivation is one important livelihood activity especially in the eastern part of Nagaland. The major French bean growing districts of Nagaland are Tuensang, Kiphire, and Zunheboto.

According to the department of agriculture, Govt. of Nagaland (2017), the total area of French bean production was 9.23 thousand hectares with a total production of 11.64 thousand metric tonnes with a yield of 1,261 kilograms per hectare. French bean is a traditional crop serving as staple food apart from rice for the eastern people of Nagaland.

Further, climate change is a well-recognized challenge globally. In climate change scenario, French bean and leguminous crops have potential to reduce the industrial emission of green house gases (Patra and Babu, 2017).

The present study was conducted with the aim to characterize the socio-economic features of French bean growers of Kiphire, so as to have a comprehensive understanding of the different livelihood activities maintained to achieve a means of living. Hence, it may provide valuable information to the academicians, planners, policymakers and extension workers about

existing socio-economic conditions, livelihood activities maintained by the French bean growers as well as the rural people of the State.

METHODOLOGY

The study was conducted in Kiphire district of Nagaland, India. For the study, two blocks, namely, Pungro and Kiphire, were purposively selected. Further, six villages were selected, taking three villages from each block. From each selected village, 20 French bean growers (60 growers from each block) were selected as respondents for the study. Altogether, 120 French bean growers with more than 3 years of experience of cultivation were purposively selected for the study. The data were collected by interview method using a structured interview schedule.

RESULTS AND DISCUSSION

Different socio-economic and livelihood features of the French bean growers were included in the study as maintained by the French bean growers and analysed by appropriate statistical tools.

According to the age at the time of interview (Table 1) majority of the respondents (51.57%) belonged to lower medium age group, followed by medium age group (34.17%) and old age group (13.33%) respectively. Only 0.83 per cent of the respondents belonged to the young age group. The table further showed that the average age of the respondents was 51 years with an SD value of 8.18 and range was 33-70 years. Majority of the respondents (96.67%) were male, and 3.33 per cent of the respondents belonged to the female gender.

Education has a significant influence in better and quicker understanding of information, and shorter innovation-decision period. *Gowda and Dixit (2015)* reported that higher education showed better comprehension of advisories as well as faster sharing of the received information to fellow farmers than less qualified farmers. The status of education in the study area was in a pitiable state (Table 2). Majority of the respondents from each block [Pungro block (83.33%) and Kiphire block (61.67%)] and district as a whole had a primary level of education (72.5%). The remaining respondents, i.e., 13.33 per cent and 3.33 per cent from Pungro block, had secondary education and no-education, respectively. On the other hand, 20 per cent and 18.33 per cent from Kiphire block had secondary

Table 1. Socio-economic profile of study community (N=120)

Variable	No.	%	Mean	SD*	Range
<i>Age</i>					
Young (<34)	1	0.83	51.1	8.18	33-70
Lower Medium (35-51)	62	51.57			
Medium (52-60)	41	34.17			
Old (>61)	16	13.33			
<i>Gender</i>					
Male	116	96.67	-	-	-
Female	4	3.33			
<i>Edu. Status</i>					
Illiterate	13	10.83	1.05	0.52	-
Primary	87	72.5			
Secondary	20	16.66			
<i>Occupation</i>					
Farming	120	100	-	-	-
Artisans	21	17.5			
Business	5	4.17			
<i>Household asset</i>					
Mobile phone	118	98.33	-	-	-
Television	57	47.5			
Radio	2	1.67			
<i>Agricultural asset</i>					
Machete (Dao)	120	100	-	-	-
Spade	120	100			
Traditional Basket	120	100			
Godown	79	65.83			
<i>Material possession (Household and Agril. Assets)</i>					
Low	30	25	4.13	0.84	-
Medium	44	36.67			
High	46	38.33			
<i>Type of house</i>					
Bamboo + thatch	3	2.5	-	-	-
Bamboo + tin sheet	89	74.17			
Thatch + wood plate	25	20.83			
Wood plate + tin sheet	3	2.5			
<i>Experience in French bean cultivation</i>					
6 to 8 years	17	14.17	11.12	2.41	6-20
9 to 11 years	48	40			
12 years above	55	45.83			

*SD = Standard Deviation

education and no-illiteracy, respectively. The average level of education in the study area was 1.05, with an SD value of 0.52.

Table 1 shows that all (100%) the respondents were continuing farming as a primary occupation. These findings

are aligned with the results of *Patra et al. (2019)*. Simultaneously, 17.5 per cent had a secondary occupation as artisans and 4.17 per cent of the respondents had business as a secondary occupation.

Table 4 reveals that 98.33 per cent of the respondents had a mobile phone, 1.67 per cent of the respondents had radio and 47.5 per cent had television as a household asset. *Patra et al. (2018)* reported that television possession by mandarin growers was better than the French bean growers of Kiphire, Nagaland. In respect of agricultural implements, all the respondents had machete (dao), spade and traditional basket, and 65.83 per cent had godown. A large number of the respondents (i.e., 38.33%) had high material possession, 36.67 per cent had medium material possession, and 25 per cent of the respondents had low material possession.

Size of landholding, land allocation for French bean cultivation and experience in French bean cultivation : Higher holding size and higher operational holding size are unique inputs of improved farming pattern. Holding size is an essential requirement for risk bearing capacity of farmers (*Patra et al., 2004*).

Size of landholding : Table 2 reveals that 51.67 per cent (65% and 38.33% from Pungro and Kiphire block) of the respondents had a medium size of landholding. Another 24.17 per cent (28.33% of Pungro and 20% of Kiphire block) of the respondents had landholding between 1 to 2 hectares and categorised as small farmers. Again, 16.67 per cent of the respondents had a landholding of more than 5 hectares and categorized as large farmers. Another 7.5 per cent of the respondents had landholding less than 1 hectare and categorized as marginal farmers. The average size of land holdings across the blocks was 3.11 hectares, with anSD value of 1.72.

Land under French bean cultivation : Based on the area of land under French bean cultivation, respondents were categorized into 3, namely, Small, Medium and Large by using mean and standard deviation value of land under French bean (Table 2). The table reveals that 79.17 per cent of the respondents (96.67% of Pungro block and 61.67% of Kiphire block) had medium land (0.34-2.78 ha) under French bean cultivation. Around 15.83% (1.67% of Pungro block and 30% of Kiphire block) of the respondents had a large area of land under French bean cultivation (>2.78 ha) and remaining 5% (1.67% of Pungro and 8.33% of Kiphire block) of the respondents had a small area of land (<2.78 ha) under French bean cultivation. The average land under French bean cultivation was 1.56 ha with anSD value of 1.21.

Experience in French bean cultivation : Table 2 also shows that from Pungro block, the majority of the respondents (51.67%) had 9 to 11 years of experience in French bean cultivation. Another 30 per cent of the respondents had more than 12 years of experience in French bean cultivation and the remaining 18.33 per cent had 6 to 8 years of experience. On the other hand, in Kiphire block, 61.67 per cent of the respondents had more than 12 years of experience, and 28.33 per cent of the respondents had 9 to 11 years of experience and another 10 per cent had 6 to 8 years of experience in French bean cultivation.

A large number of the respondents (45.83%) across the study had more than 12 years of experience, and another 40 per cent had 9 to 11 years of experience and the remaining 14.17 per cent had 6 to 8 years of experience in French bean cultivation. The mean year of experience was 11.12 years with anSD value of 2.41.

In respect of type of house (based on the materials used for construction), majority of the respondents

Table 2. Distribution of respondents based on Size of land holding, Land under French bean cultivation, Experience in French bean cultivation (N=120)

Variables	Pungro block		Kiphire block		Pooled		Mean	SD
	No.	%	No.	%	No.	%		
<i>Land holdings</i>								
Marginal (<1 ha)	4	6.67	5	8.33	9	7.5	3.11	1.72
Small (1-2 ha)	17	28.33	12	20	29	24.17		
Medium (2-5 ha)	39	65	23	38.33	62	51.67		
Large (>5 ha)	-	-	20	33.33	20	16.67		
<i>Land under cultivation</i>								
Small (<0.34 ha)	1	1.67	5	8.33	6	5	1.56	1.21
Medium (0.34-2.78 ha)	58	96.67	37	61.67	95	79.17		
Large (>2.78 ha)	1	1.67	18	30	19	15.83		

Table 3. Distribution of respondents based on the access of sources of information (N=120)

Source of information	Extent of use								Score	Rank
	Mostly		Sometimes		Rarely		Never			
	No.	%	No.	%	No.	%	No.	%		
Contact farmers/farmers friend	37	30.83	6	5	6	5	71	59.17	129*	I
Extension personnel	0	0	1	0.83	8	6.67	111	92.5	10	II
Television	0	0	0	0	5	4.17	115	95.83	5	III
Radio	0	0	0	0	2	1.67	118	0	2	IV

*mostly with weightage 3; sometimes with weightage 2 and rarely with weightage 1

(74.17%) had house made from bamboo and tin sheet, 20.83 per cent had house made from thatch and wood plate, 2.5% had house made from the wood plate and tin and the remaining 2.5 per cent had house made from bamboo and thatch.

Source of information : The study also reveals that around 60 per cent, 93 per cent; 96 per cent and 100 per cent of the respondents, respectively never accessed contact farmers/farmers friend, extension personnel, television and radio for information collection (Table 3). Around 31 per cent and 5 per cent each of the respondents had mostly, sometimes and rarely accessed contact farmers/farmers friend as a source of information in respect of French bean cultivation. In spite of performance of Contact farmers/farmers friend in terms of information dissemination was ranked first followed by extension personnel which was ranked second. Again, a negligible portion of respondents also used television and radio as a source of information in respect of French bean cultivation which was ranked third and fourth, respectively. It is emerged that performance of extension personnel or extension system in terms of information and technology dissemination was in pitiable state. Development of skill and competency of lower level extension functionaries, and establishment of computerized Rural knowledge Centre are the measures to mitigate the poor performance of extension system (Mondal, Patra and Bandyopadhyay, 2005).

Marketing channel : Marketing of farm produce is a big challenge to farmers. Ao and Patra (2018) reported that significant change had achieved in respect of marketing opportunity due to intervention of IWMP in Wokha, Nagaland. Table 4 shows that majority of the respondents (75%) had utilized both the channels for marketing of their product. Around 14.17 per cent of the respondents sold their product through wholesale and remaining 10.83 per cent sold through the retail channel.

Income and contribution of French bean : Study

Table 4. Distribution of respondents based on marketing channel (N=120)

Channel	No.	%
Wholesale	17	14.17
Retail	13	10.83
Both	90	75

reveals that the majority (i.e., 79.17%) of the respondents had medium income from French bean cultivation. Another, 15 per cent and the remaining 5.83 per cent of the respondents had high and low income from French bean cultivation, respectively. Similarly, the distribution of respondents in terms of income from French bean, 91.67 per cent from Pungro and 66.67 per cent from Kiphire block, respectively had medium income. The mean income from French bean was ¹ 28,834.16 with an SD value of 18607.11.

In respect of income from agriculture, majority of the respondents (75.83%) from the study area (pooled sample) had medium income from agriculture, 12.5 per cent had a low income, and remaining 11.67 per cent had low income from agriculture. The mean income from agriculture was ¹ 58,086 with an SD value of 30246.77 (Table 5).

On the other hand, majority of the respondents from Pungro (81.67%) and Kiphire (70%) blocks had medium income from agriculture. And 3.33 per cent and 20 per cent of respondents from Pungro and Kiphire block had high income and the remaining 15 per cent and 10 per cent of respondents from Pungro and Kiphire block had low income.

The study also reveals that the majority of the respondents from Pungro block and Kiphire block (i.e., 85%, 56.66%), respectively had an annual income below Rs. 70,000. The average annual income was Rs. 63,662 with an SD value of 32379.93. The study (Table 5) also explored that French bean had contributed around 45.29 per cent - to the annual income, and 49.64 per cent to the

Table 5. Distribution of respondents based on income from French bean, Income from agriculture and annual income

Category	Pungro block		Kiphire block		Pooled		Mean	SD	Contribution
	No.	%	No.	%	No.	%			
<i>Income from French bean</i>									
Low (<Rs.10227.05)	2	3.33	5	8.33	7	5.83	28834.16	18607.11	100
Medium (Rs. 10227.05- 47441.27)	55	91.67	40	66.67	95	79.17			
High (>Rs. 47441.27)	3	5	15	25	18	15			
<i>Income from agriculture</i>									
Low (<Rs. 27839.22)	9	15	6	10	15	12.5	58086	30246.77	49.64
Medium (Rs. 27839.22- 88332.77)	49	81.67	42	70	91	75.83			
High (>Rs. 88332.77)	2	3.33	12	20	14	11.67			
<i>Annual income</i>									
Low (<Rs. 35,000)	6	10	8	13.33	14	11.67	63662.25	32379.93	45.29
Lower middle (Rs. 35,001- 70,000)	45	75	26	43.33	71	59.17			(*91.24%)
Middle (Rs.70,001 – 105,000)	8	13.33	19	31.67	27	22.5			
Upper middle (Rs.105,001 – 140,000)	1	1.67	2	3.33	3	2.5			
High (>Rs.140,000)			5	8.33	5	4.17			

*Contribution of agricultural income in annual income

Table 6. Comparison of experience in French bean cultivation, size of land holdings, and land allocation under French bean cultivation between blocks (N=120)

Block	Average of experience	Average of landholdings	Av. of land under French bean
KIPHIRE	12.083	3.692	1.983
PUNGRO	10.167	2.532	1.132
Grand Total	11.13	3.11	1.56

agricultural income. Agriculture was found to contribute about 91.24 per cent of the annual income.

Comparison of experience in French bean cultivation, size of land holdings, and land allocation between blocks : Here a comparison between the blocks (i.e., Pungro and Kiphire) were made with respect to 'experience in french bean cultivation', 'size of land holdings', and 'land under french bean cultivation'. The comparison was done using pivot analysis which is given in Table 6.

The table shows that farmers from Kiphire block were more experienced in terms of French bean cultivation, had larger average landholdings and had more land allocation under French bean cultivation compared to farmers of Pungro block.

Different livelihood activities continued in the study area : In the present study, five different livelihood activities were considered namely, French bean cultivation (L_1), crop-based (excluding French bean cultivation) livelihood activities (L_2), livestock-based livelihood activities (L_3), forest-based livelihood activities (L_4) and off-farm livelihood activities (L_5) (Table 7).

Crop based livelihood activities are representing

Table 7. Distribution of respondents according to the different livelihood activities N=120

Livelihood activities	No.	%
French bean cultivation (L_1)	120	100
Other Crops based (L_2)	86	71.67
Livestock based (L_3)	115	95.83
Forest-based (L_4)	120	100
Off farm based (L_5)	26	21.67

activities of different crop cultivation, livestock-based livelihood activities representing rearing of different livestock, forest-based livelihood activities representing different activities, like, hunting, fishing, foraging, firewood and timber collection. Off-farm livelihood activities represent different off-farm activities like weaving, carpentry, business etc.

The Table 7 reveals that all the respondents were simultaneously continuing French bean cultivation and Forest-based livelihood activities, and 95.83, 71.67 and 21.67 per cent were continuing Livestock based, other crop-based and off-farm livelihood activities, respectively.

The Table 8 shows the distribution of respondents based on income from different livelihood activities.

Table 8. Distribution of respondents according to the income from different livelihood activities (N=120)

Income class	French bean based (L ₁)		OtherCrop based (L ₂)		Livestock based (L ₃)		Forest-based (L ₄)		Off-farm-based (L ₅)	
	No.	%	No.	%	No.	%	No.	%	No.	%
Low	94	78.33	120	100	102	85	120	100	120	100
Lower middle	21	17.5	0	0	11	9.17	0	0	0	0
Middle	5	4.17	0	0	7	5.83	0	0	0	0
Mean	28834.17		6827.67		23100		937.5		1991.45	
SD	18607.11		5702.75		20005.26		3117.83		4785.47	
Mean of total income					61690.79					
% of contribution	46.74		11.06		37.44		1.52		3.23	

Low (\leq Rs.35,000); Lower middle (Rs.35,001- 70,000); Middle (Rs.70,001 – 105,000);

Majority of the respondents with all livelihood activities (French bean cultivation, livestock-based, crop-based, forest-based and off-farm livelihood activities) were under low income (<Rs. 35,000) category. Around 17.5 per cent of the respondents had income from French bean between Rs.35,001- 70,000 and 4.17 per cent had income between Rs. 70,001 – 105,000. Further, French bean cultivation contributed 46.74 per cent in the total annual income. Similarly, livestock-based livelihood activities contributed 37.44 per cent, other crop-based livelihood activities contributed 11.06 per cent, off-farm activities contributed 3.23 per cent and forest-based livelihood activities contributed around 1.52 per cent respectively.

CONCLUSION

The study shows farming was the main occupation and continued by all the respondents. Majority of the respondents had medium landholdings as well as land under French bean cultivation. Most of the respondents were highly experienced in French bean cultivation and found to have more than 9 years of experience with an average of 11 years' experience in French bean cultivation. French bean cultivation had contributed around 45.29 per cent of total income and 49.64 per cent of total agricultural income. There was a significance difference in income from French bean cultivation between the respondents from two blocks.

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