

An assessment of livelihood activities maintained by French bean growers in Nagaland

Benjongtoshi¹ and N. K. Patra²

1. Ph D. Scholar 2. Assistant Professor, Department of Agricultural Extension, SASRD
Nagaland University, Nagaland

Corresponding author's e-mail: toshi.imchent@gmail.com

ABSTRACT

Livelihood refers to the activities maintained by an individual or as a group to achieve the means of living. The present study aims to identify the different livelihood activities maintained by the French bean growers of Nagaland. The study was conducted in Tuensang and Kiphire district of Nagaland where 4 blocks was selected purposively. Further a total of 12 villages were selected taking 3 villages from each block. A sample size of 240 respondents was considered for the study. From the number of livelihood activities identified, French bean (100%), maize (97.08%) and rice cultivation (67.91%) was the major activities maintained under crop based livelihood. Among livestock based livelihood, poultry (90.41%) and piggery (88.75%) were the major activities maintained by the farmers. Again, under forest based livelihood, collection of firewood (100%) and timber collection (4.58%) were the major activities maintained and grouped under timber based activities whereas forest honey collection, fishing, hunting, forest honey collection and foraging were the major activities maintained by the farmers which were group under non-timber based forest activities (19.57%). Further, farmers were found to engage in other off farm based livelihood activities such as weaving, government job, carpentry and business (17.47%). A relationship study between different socioeconomic variables and livelihood score index showed that material possession, educational qualification, type of house, size of land holding, annual income and annual expenditure had positive and significant correlation with livelihood index. Age was found to have a significant but negative correlation with livelihood index.

Keywords: Livelihood, crop-based, livestock-based, forest-based, off farm-based, livelihood index.

INTRODUCTION

India being a diverse country, it has diverse livelihoods which are maintained in order to achieve a day to day living. These livelihood strategies as maintained by the people living in different geographic locations which were developed over a span of time so as to fit their basic necessities and it defers from place to place. Engberg (1996) also stated livelihood as “the mix of individual and household survival strategies, developed over a given period of time that seeks to mobilize available resources and opportunities”. These livelihood diversification refers to the attempts made by individuals and households to find new ways to raise incomes and reduce environmental risk, which differ sharply by the degree of freedom of choice (to diversify or not), and the reversibility of the outcome (Hussein and Nelson, 1998). Livelihood in true sense can be defined as the capabilities, assets (including both material and social resources) and activities required for a means of living (Chambers and Conway, 1991). For people living in rural area, though agriculture being the major source of

livelihood, off-farm activities also plays an important role. Subakanya *et al.* (2018) also rightly said that while crop and non-crop agriculture plays a dominant role in the livelihoods of most rural households, off-farm activities are also important.

Nagaland is one among many rural states in the country, where agriculture is the dominant form of livelihood activities practiced. The State is predominantly rural, with 71.03 per cent of the population living in villages. The main economic and livelihood activity of the villagers is agriculture, with the rearing of livestock, weaving, blacksmith and handicrafts as supplementary. The tribal people have numerous livelihood strategies of which French bean cultivation is an important livelihood strategy, existing in the eastern part of the State. Different communities adopt different practices to secure their means of livelihood and have different approaches to it. They have their ways and means, customs and practices that have enabled them to gain a sustainable livelihood (Zingkhai, 2015).

From development perspective, the concept of livelihood and its sustainability is increasingly

important. Surprisingly, attention of the development sector was mainly confined on the improvement of livelihood of the people by the adoption of some external livelihood strategies and the improvements of the existing livelihood strategies was over sighted and were relatively less emphasized. Therefore, with the identification of different livelihood activities of the farmers and French bean growers in particular, the present study may provide valuable insight in terms of potentiality of the existing livelihood strategies in the study area. Such insight may help policymakers, extension workers and academicians in exploring the potentiality of the existing livelihood activities so as to improve the living condition of the farmers.

METHODOLOGY

The present study was conducted in Tuensang and Kiphire district of Nagaland. For the present study, purposive sampling technique was adopted to select district, blocks, villages, and respondents. Out of the selected districts, two blocks were purposively selected from each district where maximum farmers were growing French bean regularly in large scale. After the selection of block, three French bean growing villages were purposively selected from each selected block. The data for the study was collected from a sample of 240 respondents taking 20 French bean growers from each selected village. Descriptive research design was adopted for the study.

A score index was developed for each

respondent maintaining different livelihoods. The objective of the index was to provide a based model on the quantitative measurements of livelihood. The index was developed by scoring each livelihood activity maintained by an individual. Respondents were asked to mention all livelihood activities maintained by them and numbers of activities were converted into a score by giving weightage of 1 to each livelihood maintained. Therefore, the index was developed by calculating the total score achieved by the individual respondent based on the scoring against each maintained livelihood activity divided by total achievable score (total number of livelihood identified for the study) multiplied by 100. The formula for calculation of score index is presented as follows:

$$LSI = \frac{\text{Total score achieved in sustainability parameters}}{\text{Total achievable score}} \times 100$$

(LSI = Livelihood Score Index)

Finally, a correlation study was also done for the study between selected socio-economic variables and livelihood score index of French bean growers. The data were collected through personal interview method. The data collected were scored, tabulated and analyzed using suitable methods. The statistical techniques and methods used for the study were frequency, percentage, mean, standard deviation and correlation coefficient.

RESULT AND DISCUSSION

Table 1 shows the profile of the

Table 1
Distribution of respondents according to their profile

Sl. No	Variable	F	%	Mean	SD
Age					
1	Young (<34)	3	1.25	51.98	8.86
2	Lower Medium (35-51)	115	47.91		
3	Medium (52-60)	79	32.91		
4	Old (>61)	43	17.91		
Educational qualification					
1	Illiterate	35	14.58	1.02	0.56
2	Primary	163	67.91		
3	Secondary	42	17.50		
4	Graduate	0	0		
5	Post graduate	0	0		

Material possession					
1	Low	39	16.25	4.28	0.79
2	Medium	194	80.83		
3	High	7	2.91		
Type of house					
1	Bamboo + thatch	5	2.08		
2	Bamboo + tin sheet	162	67.5		
3	Thatch + wood plate	44	18.33		
4	Wood plate + tin sheet	29	12.08		
Size of land holding					
1	Marginal (<1)	10	4.16	3.73	1.96
2	Small (1.01-2)	33	13.75		
3	Medium (2.01-5)	140	58.33		
4	Large (>5)	57	23.75		
Annual income					
1	Low (<=35,000)	22	9.16	69661.45	38932.89
2	Lower middle (35,001- 70,000)	127	52.91		
3		68	28.33		
4	Upper middle (105,001 – 140,000)	13	5.41		
5	High (>140,000)	10	4.16		

respondents. From the Table 1 majority of the respondents (47.91%, 32.91% & 17.91%) belonged to lower medium age and above groups (>35 years). The average age of the respondents was 52 years with a standard deviation value of 8.86. Also, majority of the respondents (67.91%) had education qualification up to primary level, 17.5 per cent of the respondents had secondary level of education and the remaining 14.58 per cent of the respondents were illiterate.

The table revealed that 80.83 per cent of the respondents had medium material possession, 16.25 per cent had a low level of material possession and only 2.91 per cent of the respondents had a high level of material possession with a mean value of 4.28 and standard deviation value of 0.79.

Around 67.5 per cent of the respondents had house made from 'bamboo and tin sheet', 18.33 per cent of the respondents with 'thatch and wood plate', 12.08 per cent with 'wood plate and tin sheet' whereas only 2.08 per cent of the respondents had house made from bamboo and thatch. The majority of the respondent's house made of bamboo and tin sheet may be due to abundance in the availability of bamboo in the villages and surroundings. It reveals

the richness in natural resources in the region and also the house being constructed with light material like bamboo and tin sheet represents a quintessential rural area. This finding is in line with the study conducted by Cuadrado and Mantiza (2016).

In case of size of land holdings, majority of the respondents had medium land holdings followed by large, small and marginal land holdings respectively. The average size of land holding in the study area was 3.73 ha with a standard deviation value of 1.96. Also, majority of the respondents (52.91%) in the study area were from lower-middle-income group with an average income of ? 69,661.45 with a standard deviation value of 38932.89.

1. Livelihood activities identified

In the study, a number of livelihood activities maintained by the respondents were identified and categorized in to different groups i.e. crop-based, livestock-based, forest-based and off farm-based. Distribution of respondents was done based on the different livelihood activities continued by the respondents which is represented in Table 2.

Table 2
Distribution of respondents according to the livelihood activities identified

Sl. No.	Activities	Respondents	
		F	%
Crop based			
1	French bean	240	100.00
2	Rice	163	67.91
3	Maize	233	97.08
4	Soybean	15	6.25
5	chilli	146	60.83
6	Potato	51	21.25
7	Taro	132	55.00
8	Pumpkin	46	19.16
9	Other vegetables	91	37.91
Livestock based			
10	Poultry chicken	217	90.41
11	Piggery	213	88.75
12	Beekeeping	22	9.16
13	Mithun	17	7.08
14	Cattle	7	2.91
Forest based			
15	Forest honey	7	2.91
16	Miscellaneous (Fishing, hunting, fodder collection)	40	16.66
17	Wood	11	4.58
18	Bamboo	3	1.25
19	Firewood	240	100.00
20	Plantation	6	2.5
Off farm based			
21	Gov. job	4	1.66
22	Weaving	25	10.41
23	carpentry	7	2.91
24	Business	5	2.08
25	Driving	1	0.41

The Table 2 shows that all of the respondents were growing French bean, while 67.91 per cent of the respondents were found to grow rice and 97.08 per cent of the respondents were growing maize. The table also shows that respondents were growing, soybean, chilli, potato, taro, pumpkin and other vegetables. Therefore, french bean and maize were found to be the major crops grown by the farmers, as every household in the study area were growing these crops.

Again in terms of livestock-based livelihood activities, 5 activities were found to taken up by the farmers out of which poultry chicken and piggery were found to practice by majority of the farmers. In terms of forest-based livelihood activities, firewood collection was done by all the respondents. Respondents were also found to remain engaged in non-timber forest-based livelihood activities, such as fishing, hunting, forest honey collection and foraging. Though these activities were directly not contributing in terms of income but found to play an

important role in terms of nutrition and food security.

Further, in case of off farm-based livelihood, activities like weaving, carpentry, business and

driving were taken up by the respondents in order to supplement their livelihood. Only a negligible percent of respondents were in pursuance of government job.

Table 3
Distribution of respondents based on the number of livelihood activities maintained

Sl. No.	Details about livelihood activities				Frequency	percentage	Mean	SD
	Recognized	Major	Minor	Maintained				
1	25	8	17	3	2	0.83	8.45	1.37
2				4	9	3.75		
3				5	36	15.00		
4				6	61	25.42		
5				7	71	29.58		
6				8	39	16.25		
7				9	16	6.67		
8				10	6	2.50		

Table 3 shows the distribution of respondents based on the number of livelihood activities. Majority of the respondents *i.e.* 71.00 per cent maintained 6 to 8 livelihood activities and around 19.00 per cent of the respondents maintained 3 to 5 livelihood activities. Again, little over 9.00 per cent of the respondents maintained 9 to 10 livelihood activities. The average number of livelihood activities maintained by the respondents was 8.45, with a standard deviation value of 1.37 and ranged

from 3 to 10 livelihood activities. Altogether, 25 livelihood activities was recognized in the study area. Out of that 8 activities were considered as major ones as they were playing major role in the livelihood and more than 50.00 per cent of the French bean growers were maintaining those. Another, 17 livelihood activities were considered minor as less than 50.00 per cent to only a negligible number of respondents were continuing those.

Table 4
Distribution of respondents based on livelihood index

Sl. No.	Livelihood index	Frequency	Percentage	Mean	SD
1	Low (<31.18)	47	19.59	39.24	8.06
2	Medium (31.18-47.30)	171	71.25		
3	High (>47.30)	22	9.16		
	Total	240	100.00		

The Table 4 shows the distribution of respondents based on livelihood index. The table reveals that 71.25 per cent of the respondents had medium livelihood index, 19.58 per cent had low livelihood index and 9.16 per cent had high livelihood index. The average livelihood index was

39.24, with a standard deviation value of 8.06. It is important to mention that the respondents with large number of livelihood activities were acquired higher livelihood index score.

Table 5
Relationship between various socio-economic variables and livelihood index

Sl. No.	Socio-economic variables	Value of 'r'
1	Age	-0.185**
2	Material possession	0.327**
3	Educational qualification	0.184**
4	Type of house	0.146*
5	Size of land holding	0.158*
6	Annual income	0.193**
7	Annual expenditure	0.176**

Here an attempt was made to correlate various socio-economic variables and livelihood score index. The Table 5 reveals that 'age' had a significant but negative correlation with livelihood index. But, 'material possession', 'Educational qualification', 'type of house', 'size of land holding', 'annual income', and 'annual expenditure' had a significant and positive correlation with livelihood index.

Therefore, age, material possession, educational qualification, type of house, size of land holding, and annual income had played a significant role in the livelihood of the French bean grower.

CONCLUSION

The majority of the population in Nagaland lives in a rural area and were dependent on agriculture. The present study was conducted to highlight the rural livelihood strategy as maintained by the French bean farmers in particular. The study was conducted to explore the various livelihood activities among French bean growers where the average age group of the farmers were around 52 years old which implies that middle age farmers were more active among the farming community. Further, most of the farmers were having education

only up to primary level which depicts the pitiable state of education standard in the study area. Since majority of the population reside in the rural area having poor economic condition, most of them were with low annual income, they had houses build with bamboo which also ironically depicts the rich natural resources of the area. Also due to low income, most of the farmers had only medium material possession. Being an agriculture dependent state, majority of population were dependent on agriculture where most of the farmers had medium to large land holdings which was dedicated solely to agriculture. Farmers also resort to variety of livelihood strategies for their survival as such farmers were found to maintain different types of livelihood activities which comprises of crop-based, livestock-based, forest based and off farm based activities. Among these activities, growing of French bean, maize, rice, rearing of poultry, piggery were the most important activity in terms of crop based livelihood. The number of livelihood activities as maintained by the farmers were also found to be significantly affected by farmers' age group, educational status, size of land holdings and annual income of the farmers which is revealed from correlation study with socio economic variables.

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