



RESEARCH ARTICLE

MEASUREMENT OF THE EXISTING SUSTAINABLE LIVELIHOOD OF THE TRIBAL AND  
NON-TRIBAL FARMERS

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ABSTRACT

Widespread poverty is a stable crisis and poverty alleviation has been a key component in development plan. Poverty is a complex set of problems, and that poverty alleviation can only be accomplished by a portfolio of policies and programs customized to explicit aspects of the problem. It recognizes that poverty alleviation efforts must reflect the best practices in public management, including the specification of concrete goals, the assessment of the strategies and the ability to learn and improve. Formulation of programmes to mitigate poverty essentially requires knowledge of what are now recognised as enormously comp Agriculture and agro-based industries play an important role in the improvement of the rural economy in India. At present, about 70 per cent of Indians depend on agriculture for their livelihood. A large number of tribal community is bereft of stable livelihoods and thus they fall in the category of the vulnerable section of Indian society. Therefore, It is essential to provide the latest information regarding the agricultural modernizations lead to formalization of the sustainable livelihood approach. Sustainable Livelihood security to basic human needs, food security, sustainable agricultural practices and poverty and describes as an integrating concept. A Livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living; a livelihood is sustainable which can cope with and recover from stress and shocks and maintain or enhance its capabilities and assets. The present study was conducted in Sabarkantha district of North Gujarat region of Gujarat State, as the economy of the districts basically dependent on agriculture and the district ranks first with respect to tribal population amongst the districts of North Gujarat region. It is seen that only 14 villages out of 1.372 were having percentage range of scheduled tribes population of 41-50, covered in Khedbrahma, Vijaynagar, Bhiloda and Meghraj talukas of the district. Among these four talukas considering the numbers of villages Meghraj and Bhiloda talukas were selected purposively. All 11 villages of Bhiloda and Meghraj talukas, having scheduled tribes population of 41-50 range of percentage were selected purposively. Ten tribal farmers and ten non-tribal farmers from each village were selected randomly. Thus, total 220 farmers were selected. Sustainable livelihood was measured through three different indicators viz., social, economic and environmental indicator. To measure these indicators a teacher made test was developed, and total 12 sub indicators were determined. The score of sub indicators were given by organizing conference method of the teachers. All indicators score were summed up to get the Sustainable Livelihood Index (SLI) of individual respondent It was found that the average mean score of all the selected sub indicators of S.L.I. of non-tribal respondents were higher than tribal respondents. The indicators of sustainable livelihood in both groups of farmers were differentiate with some specific indicators viz., consumption pattern, cultural events, tradition, health services and financial system. Which were indicated the standard and the gap of sustainable livelihood between the tribal and non-tribal respondents. The majority (90.91%) of the tribal respondents were having low to medium extent of sustainable livelihood. In the case of non-tribal respondents 87.27 per cent were having medium to high extent of sustainable livelihood. The size of family, annual income, livestock possession and cosmopolitaness were associated positively and significantly with S.L.I. of tribal farmers. While in case of non-tribal respondents, all the independents variables, except livestock possession were important variables affecting the S.L.I. lex causes. Empirical identification of these causes is a formidable task because of the conceptual issues involved in defining the many dimensions of poverty, the data constraints in measuring its incidence and econometric problems in estimating the relationships between the casual factors and poverty levels. The development of the concept of Self Help Group was one of the most prominent poverty alleviation programmes. This paper focuses on the status of micro finance through SHG bank linkage programme in Assam.

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INTRODUCTION

Agriculture and agro-based industries play an important role in the improvement of the rural economy in India. At present,

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about 70 percent of Indians depend on agriculture for their livelihoods. It is a major constituent of the Indian economy that accounts for not only the main source of income to the rural population but also has a decisive say in all economic policies of India. Small and marginal farmers constitute a major portion of the rural agriculture sector. The Indian

industry is also largely reliant on agriculture for both inputs and end-user applications. However, the limited availability of land, the limited cash returns, and agriculture being confined to one or two seasons in the year, have made the villagers look for other livelihood support systems for their sustenance. A large number of tribal community is bereft of stable livelihoods and thus they fall in the category of the Vulnerable section of Indian Society. Therefore, it is essential to provide the latest information regarding the agricultural modernization to sharpen their knowledge in terms of assets and activities required for a means of living, not only living but have been lead to formalization of the Sustainable livelihood approach. Considering this fact, the study was conducted with following objectives.

### Objectives of The Study

- [1] To measure the existing livelihood of the tribal and non-tribal farmers.
- [2] To ascertain the association between the personal, social, economical, situational, communicational attributes of the tribal and non tribal farmers and their sustainable livelihood.

### MATERIALS AND METHODS

The present study was conducted in Sabarkantha district of North Gujarat region of Gujarat state as the economy of the district is basically dependent on agriculture as 62.8% workers are engaged in primary sector. Secondly the district ranks first with respect to tribal population amongst the districts of North Gujarat region. According to the Census-2001, proportion of scheduled tribes population to total population in villages are categorized in 9 different percentage ranges at district level, i.e. Zero percentage range of scheduled tribes population to 76 and above percentage range. It is seen that only 14 villages out of 1,372 were having percentage range of scheduled tribes population of 41-50; covered in Khedbrahma, Vijaynagar, Bhiloda, and Meghraj talukas of the district. Among these four talukas considering the numbers of villages Meghraj and Bhiloda talukas were selected purposively. Looking to the common situation of the inhabited villages for the tribal and non-tribal farmers, all 11 villages of Bhiloda and Meghraj talukas, having scheduled tribes population of 41-50 range of percentage were selected purposively. Ten tribal farmers and Ten non-tribal farmers from each village were selected. Thus, total 220 farmers were selected. Sustainable livelihood was measured through three different indicators viz., Social indicator, Economic indicator & Environmental indicator. To measure the social indicator, economic indicator and environmental indicator a teacher made test was developed. The test was consisted of major six sub indicator of social indicator. viz., education of family, training & special skill, cultural event, tradition, health services and market services. Five sub indicators of economic indicator viz., production system, financial system, employment pattern, cropping intensity and consumption pattern and one sub indicator viz., farming system of environmental indicator was involved. Total 12 sub indicators were determined for measuring Sustainable Livelihood. Such major indicators and sub indicators were discussed with the extension educationists and Agricultural economists then finally they were included in the test of

sustainable livelihood. To measure the education of family, average family education maximum 4 score was determined, while remaining eleven sub indicators of sustainable livelihood were given score by organizing conference method of the teachers. The total 300 maximum score of SLI was determined. Sustainable livelihood was calculated for each indicator for each individual respondent. All indicators score were summed up to get the sustainable livelihood index of individual respondent. The index of sustainable livelihood was calculated for each individual respondent with the help of the following formula:

$$\text{Sustainable Livelihood Index (SLI)} = \frac{\text{Sum of scores of all indicators rated by Individual}}{\text{Maximum score attributes to the all indicators rated.}} \times 100$$

### RESULT AND DISCUSSION

#### Indicators of Sustainable Livelihood

Sustainable livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living; a livelihood is sustainable which can cope with and recover from stress and shocks and maintain or enhance its capabilities and assets. DFID distinguishes five categories of assets (or capital)-natural, social, human, physical and financial. Considering the above concept, sustainable livelihood measured from three different indicators of respondents. The Indicator which were Social indicator, Economic indicator & Environmental indicator. Sustainable livelihood index was calculated for each indicator for each individual respondent. All Indicator score were summed up to get individual respondent livelihood index. A perusal of data presented in Table 1 indicate that indicators of sustainable livelihood among selected social indicator changes were found in tribal respondents, like health services with a mean score of 5.49, cultural events with a mean score of 5.06, tradition (mean score 4.86) and market services (mean score 2.20) were ranked 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 7<sup>th</sup>, respectively. While among the selected economic indicator changes to be appeared in sub indicators viz., financial system (mean score 3.82), consumption pattern (mean score 3.54) and production system (mean score 2.29) and were ranked 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup>, respectively. While among the environmental indicator the sub indicator viz., farming system had 1.79 mean score and was ranked on eighth number.

Remaining sub indicators of economical and social indicator viz., employment pattern, cropping intensity, education of family and training and special skill were appeared with too much less average mean score, which is indicating that these sub indicators had not changed their status for sustainable livelihood, among tribal respondents. It is evident from the data presented in above Table 1 in the case of non tribal respondents particularly in social indicator most affected sub indicators which on their sustainable livelihood were viz., tradition (10.36 mean score), health services (9.32 mean score), cultural events (8.41 mean score) and market services (2.86 mean score) and were ranked 2<sup>nd</sup>, 4<sup>th</sup>, 5<sup>th</sup> and 7<sup>th</sup>, respectively. While in economic indicator the sub indicators

**Table 1. Overall rank order of indicators of sustainable livelihood possessed by tribal and non-tribal farmers**  
(n = 220)

Sr. No.	Name of Indicators of Sustainable Livelihood	Tribal Farmers		Non-tribal Farmers	
		Av. Mean Score	Over all Rank	Av. Mean Score	Over all Rank
(A)	Social Indicator				
1.	Education of Family	0.83	XI	1.40	X
2.	Training & Special skill	0.11	XII	0.26	XI
3.	Cultural events	5.06	II	8.41	V
4.	Tradition	4.86	III	10.36	II
5.	Health services	5.49	I	9.32	IV
6.	Market services	2.20	VII	2.86	VII
(B)	Economic Indicator				
1.	Production system	2.29	VI	4.30	VI
2.	Financial system	3.82	IV	9.85	III
3.	Employment pattern	1.19	IX	2.74	VIII
4.	Cropping Intensity	1.12	X	1.40	X
5.	Consumption pattern	3.54	V	11.59	I
(C)	Environmental Indicator				
1.	Farming system	1.79	VIII	2.65	IX

**Table 2. Distribution of the respondents according to their extent of sustainable livelihood index**

(n = 220)

Sr. No.	Sustainable Livelihood Index	Tribal farmers		Sr. No.	Sustainable Livelihood Index	Non-tribal farmers		'Z' value
		Number	Percent			Number	Percent	
1.	Low (Below 18.95 )	26	23.64	1.	Low (Below 51.92)	14	12.73	
2.	Medium (18.95 to 32.17)	74	67.27	2.	Medium (51.92 to 81.56)	73	66.36	
3.	High (Above 32.17)	10	09.09	3.	High (Above 81.56)	23	20.91	
Total		110	100.00			110	100.00	2.1372*

Mean: 25.56 S.D.: 6.61 Mean: 66.74 S.D.: 14.82

\* Significant at 0.05 level of significance

**Table 3. Correlation coefficient of selected independent variables with Sustainable livelihood**  
(n = 220)

Sr. No.	Variables	'r' value	
		Tribal farmers	Non-tribal farmers
[I]	Personal variables		
i	Age	-0.0299 <sup>NS</sup>	0.1994*
ii	Education	0.1587 <sup>NS</sup>	0.2365*
[II]	Social variables		
i	Size of family	0.1895*	0.2390*
ii	Social participation	0.1528 <sup>NS</sup>	0.2072*
[III]	Economic variables		
i	Land holding	0.1776 <sup>NS</sup>	0.2820**
ii	Annual income	0.1927*	0.2532**
[IV]	Situational variables		
i	Source of irrigation	0.1123 <sup>NS</sup>	0.1945*
ii	Livestock possession	0.1982*	0.1728 <sup>NS</sup>
[V]	Communication variables		
i	Sources of information	0.1791 <sup>NS</sup>	0.3028**
ii	Cosmopolitaness	0.1923*	0.2927**

\* significant at 0.05 level of probability

\*\* significant at 0.01 level of probability

NS = Non significant

were most affected viz., consumption pattern (11.59 mean score), financial system (9.85 mean score), production system (4.30 mean score) and employment pattern (2.74 mean score) and were ranked 1<sup>st</sup>, 3<sup>rd</sup>, 6<sup>th</sup> and 8<sup>th</sup>, respectively. The data presented in the Table 1, also clearly show that the average mean score of all the selected sub indicators of sustainable livelihood of non-tribal respondents were found higher than the average mean score of the selected sub indicators of sustainable livelihood of tribal respondents. The above discussion leads to be concluded that indicators of sustainable livelihood in both groups of farmers which differentiate with some specific indicators viz., consumption pattern, cultural events, tradition, health services and financial system which were indicated the standard and the gap of sustainable livelihood between the tribal and non-tribal respondents. The

probable reasons for such type of results might be that the traditional way of living and customs of the tribal community are directly affected to their sustainable livelihood.

#### Extent of sustainable livelihood index

The data presented in Table 2 reveal that the above two-thirds (67.27 per cent) of tribal respondents were having medium extent of sustainable livelihood, while 23.64 per cent of them had low extent of sustainable livelihood index, whereas only 9.09 per cent of them had high extent of sustainable livelihood. In the case of non-tribal respondents two-thirds (66.36 per cent) of the respondents were having medium extent of sustainable livelihood, while 12.73 per cent of them had low extent of sustainable livelihood, whereas only 20.91 per cent of them had high extent of sustainable livelihood. It could be

concluded that majority (90.91%) of the tribal respondents were having low to medium extent of sustainable livelihood, Although in the case of non-tribal respondents 87.27 per cent were having medium to high extent of sustainable livelihood. The 'Z' value was found significant (2.1312\*) which implies that tribal farmers differ significantly from non tribal farmers with respect to their sustainable livelihood. It is also observed from the data presented in Table 2 that the high extent of sustainable livelihood index score among the tribal respondents was started above 32.18 while in case of non-tribal respondents the low and high category of extent of S.L.I. score were reported below 51.91 and 81.57, respectively. It is also interesting noted that the majority of the tribal respondents were having low to medium extent of S.L.I. whereas in case of non-tribal respondents were having medium to high extent of S.L.I.

#### **Relationship between the personal, social, economical, situational, communicational attributes of the tribal and non tribal farmers and their Sustainable livelihood**

To explore the association ship between independent variables and Sustainable livelihood, zero order correlation method was applied and the values of correlation coefficient (r) were estimated. These values have been given in Table 3. It is critically observed from table 3 that out of 10 independent variable, the correlation of four variables viz., size of family (0.1895), annual income (0.1927), livestock possession (0.1982), and cosmopolitaness (0.1923), were statistically established positively and significantly association with sustainable livelihood index of tribal farmers at 0.05 level of significance. The variable 'Age' was concerned the computed correlation coefficient was found to be negative and non-significant, while remaining variable viz., education, social participation, land holding, source of irrigation and source of information did not establish any association ship with sustainable livelihood index of tribal farmer. It can be conducted that size of family, annual income, livestock possession and cosmopolitaness were the important variable affectively the S.L.I. among the tribal farmers. In the case of non-tribal respondent, out of ten independent variable, the correlation of four variable viz., Land holding (0.2820), annual income (0.2532), source of information (0.3028) and cosmopolitaness (0.2927) were statically found to be positively and significantly associated with sustainable livelihood index at 0.01 level of significance.

While the independent variable viz., age (0.1994), education (0.2365), size of family (0.2390), social participation (0.2072), source of irrigation (0.1945) were statically found to be positively and significantly related with sustainable livelihood at 0.05 level of significant. The variable "livestock possession" was concerned the computed correlation coefficient was to be found non-significantly. It can be concluded that all the independent variables, except livestock possession were important variable affecting the S.L.I. among the non-tribal farmers. Therefore, to improve the standard of sustainable livelihood index of the rural people, they should be weighted by the planner and extension agencies. The probable reason might be that there is direct influence of agricultural modernization on the S.L.I. of non tribal farmers and they have taken the advantages of the AMI for improving the S.L.I.

#### **Conclusion**

It can be concluded that the average mean score of all the selected sub indicators of sustainable livelihood of non-tribal respondents were found higher than the average mean score of the selected sub indicators of sustainable livelihood of tribal respondents. Which were indicated the standard and the gap of sustainable livelihood between the tribal and non-tribal respondents. The majority (90.91%) of the tribal respondents were having low to medium extent of Sustainable livelihood, Although in the case of non-tribal respondents 87.27 percent were having medium to high extent of Sustainable livelihood. The size of family, annual income, livestock possession and cosmopolitaness were statistically established positively and significantly association with S.L.I of tribal farmers at 0.05 level of significance while in the case of non-tribal respondents, all the independent variables, except livestock possession were important variables affecting the S.L.I. It indicate that, there is direct influence of agricultural modernization on the S.L.I. of non-tribal farmers and they have taken the advantages of agricultural modernization for improving their S.L.I.

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