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Livelihood security of small and marginal farmers towards agricultural diversification

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Abstract

Livelihood comprises the capabilities, assets and activities required as the means of living. A livelihood is considered secure when it can cope up with and recover from stress or shocks and maintain or enhance its capabilities and assets. A multistage, purposive and random sampling technique were used for this study. Three districts of Saurashtra region were selected purposively for the study namely Junagadh, Rajkot and Gir Somnath. In the present study, livelihood security was operationalized as adequate access to food security, occupational/financial security, habitat security, educational security, health security, social security and environmental security. The results of the study revealed that the majority (58.73 percent) of small farmers had medium level of livelihood security. In case of marginal farmers, majority (53.97 percent) of farmers had medium level of livelihood security.

Keywords: Livelihood, agricultural diversification, small, marginal, farmers

Introduction

In India, agriculture is a major sector that plays a crucial role in the development of agrarian economies. During the past decade, securing livelihoods have been increasingly recognized as an important element of sustainable development. However, in India, land-based livelihoods of small and marginal farmers are increasingly becoming unsustainable, since their land is no longer able to meet the requirements of food for the family and fodder for their cattle.

The majority of small and marginal farmers cultivate mainly low value, subsistence crops. Therefore, in a subsistence agricultural system, diversification is considered as a strategy to minimize farm risk, which arises as a result of fluctuations in output prices, weather uncertainties and insect-pest incidences etc. More precisely in the era of commercial and market-led agriculture, however, diversification is a growth strategy which replaces the subsistence enterprises with the sustainable and profitable ones.

Objectives

1. To determine the livelihood security of small and marginal farmers.

Methodology

A multistage, purposive and random sampling technique were used for this study. Three districts of Saurashtra region were selected purposively for the study namely Junagadh,

Rajkot and Gir Somnath. After selection of the districts, two talukas from each district were selected randomly. Thus, total six talukas were selected for the study. After selection of the talukas, three villages from each taluka were selected randomly. In this way, total eighteen villages were selected for the study. The seven small farmers and seven marginal farmers from each village were selected. Thus, fourteen farmers were selected randomly from each village. Total forty-two small farmers and forty-two marginal farmers from each taluka were selected by using random sampling method. Thus, total 252 respondents were selected randomly from six talukas. An interview schedule was prepared because of the objective of the study and data were collected by personal interview from the selected respondents. The data were tabulated and analyzed by using suitable statistical tools.

Livelihood security

Research carried out in the late 1980s and 1990s (Chambers 1983; Dahl 1995; Farrington *et al.* 1999) ^[2, 3, 4] indicated that the focus on food and nutritional security, as they were presently conceived, needed to be broadened. It was found that food security was one subset of objectives of rural people and it was misleading to treat food security as a fundamental need independent of their wider livelihood considerations.

Thus, a livelihood security approach to rural development was adopted, which advocated a shift from a concern for national and regional food security to a concern for food and nutritional security of households. It focused not only on

food production but also on the ability of households to procure adequate food for a balanced diet. The approach also had a focus on the enhancement of capacities of people (human capital) and their access to various assets (social, natural and economic capital) to secure a sustainable livelihood.

In this context, the livelihood security was operationalized as adequate access to income and other resources to meet basic needs including food and nutrition, health facilities, occupational security, clean environment, habitat facilities, educational opportunities and community participation and social integration. In order to measure the livelihood security of rural households, a Livelihood Security Index (LSI) developed by Baby (2005) ^[1] was used.

Components of Livelihood Security Index (LSI)

The Baby (2005) ^[1] identified seven different dimensions of livelihood security and weighted based on their perceived significance in determining the livelihood security of rural households. Household food security emerged as the most important dimension, followed by occupational security, habitat security, health security, environmental security,

social security and educational security in their descending order of significance. The identified components of LSI were operationalized as given here.

- a) **Food security:** It was operationalized as availability and access to balanced food at household level.
- b) **Occupational/ financial security:** It was operationalized as the access to a regular and satisfied employment and sound financial condition of the respondent.
- c) **Habitat security:** It included housing with basic amenities.
- d) **Educational security:** It included the educational level of the family and access to educational facilities including higher education.
- e) **Health security:** It included the health status of the family and access to health care facilities.
- f) **Social security:** It involved social participation and social status of the family.
- g) **Environmental security:** It included a pollution free environment, access to water resources, eco-friendly farm management practices and protection from flood or drought conditions.

Table 1: Weightage is provided to each components of LSI as suggested by Baby (2005) ^[1].

Sr. No.	Index component	Weightage
1.	Food security	11.53
2.	Occupational/ financial security	9.56
3.	Habitat security	8.78
4.	Health security	7.91
5.	Environmental security	6.66
6.	Social security	5.18
7.	Educational security	5.01

Computing the composite index of livelihood security

Each component of livelihood security consisted different number of items/indicators and hence their range of scores was different. Therefore, the scores of all the seven components were converted into unit scores by using simple range and variance as given below

$$U_{ij} = \frac{Y_{ij} - \text{Min.}y_i}{\text{Max.}y_j - \text{Min.}y_j}$$

Where,

U_{ij} = Unit score of the i^{th} respondent on j^{th} component

Y_{ij} = Value of the i^{th} respondent on the j^{th} component

$\text{Max.}y_j$ = Maximum score on the j^{th} component

$\text{Min.}y_j$ = Minimum score on the j^{th} component

Thus, the score of each component ranged from 0 to 1 *i.e* when y_{ij} is minimum, the score is 0 and when y_{ij} is maximum the score is 1.

Then, the unit scores of each respondent were multiplied by respective component scale values and summed up. The scores thus obtained were divided by the total scale value and multiplied by 100 to get the LSI for each household.

$$LSI_i = \frac{\sum U_{ij} \cdot S_j}{\text{Total scale value}} \times 100$$

Where,

LSI_i = Livelihood Security Index of i^{th} respondent

$\sum U_{ij}$ = Unit score of the i^{th} respondent on j^{th} component

S_j = Scale value of the i^{th} component

Table 2: Based on the scores obtained by the farmers, they were grouped into three categories by using mean and standard deviation.

Sr. No.	Category	Range
1	Low level of livelihood security	< Mean – S.D
2	Medium level of livelihood security	In between Mean \pm S.D.
3	High level of livelihood security	> Mean + S.D.

Result and Discussion.

Livelihood comprises the capabilities, assets and activities required as the means of living. A livelihood is considered secure when it can cope up with and recover from stress or shocks and maintain or enhance its capabilities and assets. In the present study, livelihood security was operationalized as adequate access to food and nutrition, health facilities,

clean environment, habitat facilities, educational opportunities, community participation and social integration. Therefore, data in this regards were collected from the respondents and grouped into three categories *viz.*, (i) Low level of livelihood security, (ii) Medium level of livelihood security and (iii) High level of livelihood security and presented in Table 2.

Table 3: Distribution of farmers according to their level of livelihood security (n=252)

Sr. No.	Category	Small farmers			Marginal farmers		
		Score range	f	%	Score range	f	%
1	Low level of livelihood security	(Up to 19.37 score)	18	14.29	(Up to 19.41 score)	38	30.16
2	Medium level of livelihood security	(19.38 to 40.11 score)	74	58.73	(19.42 to 36.79 score)	68	53.97
3	High level of livelihood security	(Above 40.11 score)	34	26.98	(Above 36.79 score)	20	15.87
Total			126	100		126	100
		Mean = 29.74, S.D. = 10.37			Mean = 28.10, S.D. = 8.69		

The data presented in Table 3 revealed that nearly three-fifth (58.73 percent) of small farmers had medium level of livelihood security, followed by 26.98 percent of farmers had high and 14.29 percent of them had low level of livelihood security, respectively.

In case of marginal farmers, more than half (53.97 percent) of farmers had medium level of livelihood security, followed by 30.16 percent and 15.87 percent of them had low and high level of livelihood security, respectively.

From the above data, it can be concluded that majority (85.71 percent) of small diversified farmers had medium to high level of livelihood security. Whereas, marginal diversified farmers (84.13 percent) had low to medium level of livelihood security.

The probable reason of above finding that majority of the farmers had medium level of agricultural diversification, that may be an important factor to sustain livelihood especially to small and marginal farmers by providing income and almost all the required inputs to secure their livelihood.

This finding is similar with the finding of Shyamalie (2008)^[9], Rai (2015)^[7], Kowsalya (2017)^[6], Sajan (2021)^[7] and Gajera (2021)^[5].

Conclusion

Above result inferred that the nearly three-fifth (58.73 percent) of small farmers had medium level of livelihood security, followed by 26.98 percent of farmers had high and 14.29 percent of them had low level of livelihood security, respectively. In case of marginal farmers, more than half (53.97 percent) of farmers had medium level of livelihood security, followed by 30.16 percent and 15.87 percent of them had low and high level of livelihood security, respectively.

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