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Assessment of Livelihood Security of Tribal Farmers: A Case Study from Tribal Area of Madhya Pradesh, India

Hari Ram Barela*, Sujeet Kumar Jha, Chandan Kumar Rai and Raja Yadav

Dairy Extension Division, ICAR-National Dairy Research Institute, Karnal-132001, Haryana, India

**Corresponding author*

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A B S T R A C T

The Govt. of India focusing on the strategy for improving the livelihood security of the tribal farmers, who are still untouched by the lifestyle of the modern world. Therefore, an attempt was made through this study to find out the extent of livelihood security the tribal farmers through their different means of livelihood generation. The present study was conducted in purposively selected districts from most tribal populated area of Madhya Pradesh. A total of four blocks were selected, and from each block two villages were randomly selected. Thus, a total of eight villages were selected and from each selected village 15 respondents were selected, Thus, a total of 120 respondents were selected. To measure the livelihood security of the farmers, an index developed by Eqbal (2015) used with modifications. The index was based on 7 sub- indicators of Livelihood Security *i.e.*, Food security, Economic security, Health security, Social security, Infrastructural security, Educational security, institutional security. Majority (57.00%) of the respondents were having low level of extension contact in the study area. The overall extent of Livelihood Security was found as majority of the respondent in case of Food Security (47.50%), Economic security (52.50%), health Security (43.33%), Institutional Security (40.83%) comes under Low category, in case of education security (49.17%), infrastructure Security (46.67%) respondents come under medium category, whereas 51.67 per cent of respondent in case of Social Security comes under High category and overall Livelihood Security index 48.33% of the respondents comes under low category.

Introduction

Understanding the livelihood systems of the poor is vital to effective poverty reduction. Livelihoods of the poor can never be understood in any one-track logic - be it economic, social, technical, cultural or political. According to Webster dictionary, 'livelihood' is "living means". Conceptually, 'Livelihood' represents the means, activities, entitlements and assets, through which people make a living. A livelihood can be made up of the competencies, assets (like resources, claims and access) and ability to recover from stress and shocks, maintain or enhance its capabilities and assets, and provide viable livelihood opportunities for the subsequent generation as well as which contributes net benefits to supplementary livelihoods at the local and global levels, and in the long and

short run (Chambers and Conway, 1992). According to Frankenberger (1996), Livelihood security can be defined as "adequate and viable access to income and other resources to empower households to meet their basic needs. This comprises adequate access to food, clean water, health facilities, educational opportunities, housing, time for community participation and social integration". Livelihoods can be made up of a wide range of on and off-farm activities that organizing a variety of procurement strategies for food and cash. Thus, every household can have numerous possible sources of entitlement, which organize its livelihood. These rights are constructed on the endowments that a household has and its locus in the legal, political and social fabric of society (Drinkwater and Russinow, 1999). The risk of household livelihood failure plumps the level of susceptibility of a household to income, food, health and nutritional insecurity. Unfortunately, not all households are equal in their ability to cope with stress and repeated shocks. Underprivileged people balance contending needs for asset preservation, income generation and present and future food supplies in complex ways (Maxwell and Smith, 1992).

Materials and Methods

The present study was conducted in Madhya Pradesh. Two districts from the most 'Bhil' tribe populated districts of Madhya Pradesh were selected, purposively; and two blocks from each selected district were selected, randomly. Thus, a total of four blocks were selected. Two villages from each block were randomly selected. Thus, a total of eight villages were selected for the study. Fifteen respondents from each of the selected villages were chosen, randomly. Thus, a total of 120 respondents were selected. Data were collected with the help of an interview schedule, which was well structured and prepared on the basis of specific objectives of the study, in order to collect the required information. The interview schedule was pre-tested in the non- sampling area, among homogenous population having similar socio-economic status. Based on the feedback obtained from non-sampling area, the necessary adjustments were made in the "Interview-schedule", which was, consequently, used for the purpose of data collection from the respondents. The collected data were scored, compiled, tabulated and subjected to various appropriate statistical tools in order to draw significant results and reasonable conclusions. "Livelihood security" was operationalized as 'an adequate access to income and other resources to meet the basic needs including food and nutrition, health facilities, habitat facilities, educational opportunities and community participation and social integration. The livelihood security of the respondents was calculated by developing one 'Livelihood Security Index'. The index was developed on the basis of different indicators of livelihood security of farmers. A list of seven components was prepared by referring to different literatures. The seven indicators of livelihood security selected for this study were as Food security**,** Economic security, Health security**,** Educational security**,** Social security**,** Institutional security and Infrastructural security**.** The index of livelihood security was developed by following the further down-mentioned steps: Weightage was given to different indicators of livelihood security by taking the ranks from the judges (Scientist and Experts of Social Science). Judges' response was taken by sending questionnaire to them. For transforming rank into weightage, the methodology given by Alfares (2006) was followed. Then, the mean of these indicators was calculated and taken as a weightage of that specific indicator. Out of seven indicators of livelihood security, food security got the highest weightage (89.32), followed by health

security (80.15), economic security (78.23), educational security (78.12), social security (65.76), infrastructural security (62.15) and institutional security (59.10), respectively.

The statements demonstrative of particular indicators of livelihood security were selected by sending the statements to the experts/judges, for taking their response. On the basis of the recommendations given by the experts, final selection of statements of each indicator was done.

$$Z_{indj} = \frac{\text{Indicator j - Min j}}{\text{Max j - Min j}}$$

Where,

Zindj = standardized indicator j

Max j and Min j = maximum and minimum value of indicator j

Then, 'Household Livelihood Security Index' for each indicator of the entire households was calculated by using the formula given as below:

$$HLSi = \frac{\Sigma\ Zindj}{N}$$

Where,

HLSi = Household Livelihood Security for one indicator

Σ Zindj = summated standardized score of all households for of an indicator

N= Number of households cover in the study

Once, HLS index for one indicator was constructed, then the compound overall "Livelihood Security (LS) Index was" calculated by using the formula given as below

$$LSi = \frac{\Sigma\ Wi\ HLSi}{\Sigma\ Wi}$$

Where,

LSi = Livelihood Security

HLSi = Household Livelihood Security

ΣWi = summated value of weightage of all indicators

Results and Discussion

In this study, livelihood security of the respondents was operationalized based on 7 indicators viz., Food security, Economic security, Health security, Educational security, Social security, Institutional security and Infrastructural security.

The level and distribution of respondents in each indicator of livelihood security in the study area have been presented under the following sub-headings:

Food security index

Table 1 indicated that majority of the respondents (47.50%) were having low level of food security in the study area.

It was also found that 27.50 per cent of the respondents were having medium level of food security, and 25 per cent of them were having high level of food security, in the study area. It can be concluded from the study that more than 70.00 per cent of the respondents were having low and medium level of food security, which indicated the vulnerable conditions of the respondents with respect to the food security.

Table.1 Distribution of the respondents on the basis of food security in the study area

Variable	Respondents (n =120)		Mean
	Frequency	Percentage	
Food Security Index			
Low(<0.397)	57	47.50	0.407
Medium(0.397-0.524)	33	27.50	
High(>.524)	30	25.00	

Table.2 Distribution of the respondents on the basis of economic security in the study area

Variable	Respondents (n =120)		Mean
	Frequency	Percentage	
Economic Security Index			
Low(<0.031)	63	52.50	0.093
Medium(0.031-0.145)	43	35.83	
High(>0.145)	14	11.67	

Table.3 Distribution of the respondents on the basis of economic security in the study area

Variable	Respondents (n =120)		Mean
	Frequency	Percentage	
Health Security Index			
Low(<0.225)	52	43.33	0.270
Medium(0.225-0.371)	47	39.17	
High(>0.371)	21	17.50	

Table.4 Distribution of the respondents on the basis of educational security in the study area

Variable	Respondents (n =120)		Mean
	Frequency	Percentage	
Educational Security Index			
Low(<0.276)	46	38.33	0.383
Medium(0.276-0.427)	59	49.17	
High(>0.427)	15	12.50	

Table.5 Distribution of the respondents on the basis of social security in the study area

Variable	Respondents (n =120)		Mean
	Frequency	Percentage	
Social Security Index			
Low(<0.22)	8	6.67	0.322
Medium(0.22-0.35)	50	41.67	
High(>0.35)	62	51.67	

Table.6 Distribution of the respondents on the basis of institutional security in the study area

Variable	Respondents (n =120)		Mean
	Frequency	Percentage	
Institutional Security Index			
Low(<0.225)	49	40.83	0.232
Medium(0.225-0.335)	43	35.83	
High(>0.335)	28	23.33	

Table.7 Distribution of the respondents on the basis of infrastructural security in the study area

Variable	Respondents (n =120)		Mean
	Frequency	Percentage	
Infrastructural Security Index			
Low(<0.259)	38	31.67	0.357
Medium(0.259-0.551)	56	46.67	
High(>0.551)	26	21.67	

Table.8 Distribution of the respondents on the basis of existing livelihood security in the study area

Variable	Respondents (n =120)		Mean
	Frequency	Percentage	
Livelihood Security Index (Overall)			
Low(<0.259)	58	48.33	0.297
Medium(0.259-0.420)	39	32.50	
High(>0.420)	23	19.17	

Economic security index

Table 2 revealed that most (52.50%) of the respondents were having low level of economic security in the study area, while high and medium level of the economic security was found among the 35.83 per cent and 11.67 per cent of the respondents, respectively. More than 52.00 per cent of the respondents were having low level of economic security in the study area, which emphasized on the urgency of increasing economic opportunities for the farmers, in the study area for improving upon the economic security of the farmers.

Health security index

A perusal of Table 3 indicated that a large number of the respondents (43.33%), in the study area, were having low level of health security, followed by those having medium level of health security (39.17%) and high level of health security (17.50%), respectively.

As about nearly fifty per cent of the respondents were having low level of health security in the study area, it is indicative of the vulnerable conditions of the respondents towards health security; and hence, it needs proper attention by the Government.

Educational security index

From the Table 4 it can be revealed that a large number of the respondents (49.17%) in the study area were having medium level of educational security, followed by those having low (38.33%) and high level of educational security (12.50%), respectively.

The level of educational security in the study area was found to be good as, more than fifty per cent of the respondents were having medium to high levels of educational security.

Social security index

Regarding social security of the respondents in the study area, it was found that almost half (51.67%) of the respondents were having high level of social security; whereas, 41.67 and 6.67 per cent of the respondents had medium and low levels of social security, respectively (Table 5).

It can be concluded from the study that more than 50.00 per cent of the respondents in the study area felt themselves 'socially secure'.

Institutional security index

Majority of the respondents (40.83%) in the study area reported that there was low level of institutional security in their locality; whereas 35.83 per cent and 23.33 per cent of the respondents reported medium and high levels of institutional security, respectively, through different institutions available in their locality (Table 6).

The results suggested that there was an urgent need for increasing the number as well as role of institutions and improving the accessibility of the respondents towards different institutions in the study area.

Infrastructural security index

Regarding availability and accessibility of the respondents towards various infrastructural facilities available in the locality, it was found that most of the respondents (46.67%) had medium level of infrastructural security; while 31.67 and 21.67 per cent of the respondents had low and high levels of infrastructural security, respectively. The results indicated that only about 20.00 per cent of the respondents perceived that there was a good infrastructural facility in their locality. So, there is a need to improve the infrastructural facilities like road, electricity, transportation, irrigation facilities, etc (Table 7).

Existing livelihood security in the study area

Table 8 shows the distribution of the respondents based on their overall livelihood security into three categories, viz., low, medium

and high. The overall score for livelihood security of a respondent was calculated by taking into account the scores of different indicators of livelihood security, viz., Food Security, Economic Security, Health Security, Educational Security, Social Security, Institutional Security and Infrastructural Security. Each indicator of livelihood security was multiplied with the respective weightage to find out the overall score for 'Livelihood Security Index' of the respondents in the study area. It is evident from the above table that almost half of the respondents (48.33%) had low level of livelihood security, whereas 32.50 and 19.17 per cent of the respondents had medium and high levels of livelihood security, respectively. It can be concluded from the results that majority of the respondents in the study area were feeling unsecured with respect to their livelihood, as most of them had low and medium levels of livelihood security, only.

It can be concluded from the study that around half of the respondents were having low level of overall livelihood security. Livelihood security through all the seven indicators happened to be less than forty per cent; and among all the seven indicators, food security was contributing maximum towards improvement of overall livelihood security; while institutional security was contributing least to the overall improvement of livelihood security in the study area. The major constraints perceived by the respondents in the study area were; 'distant location of veterinary hospitals'; followed by 'lack of credit facilities for purchase of feeds, fodders and mineral mixture'; and 'non-availability of veterinary doctors and staff. It was observed that a large number of the tribal dairy farmers were illiterate. So, improving their literacy level is essential; and it could be achieved through adult education programme and 'Farmer Field Schools'. As the institutional security was contributing the least towards increasing the overall livelihood security of the tribal dairy farmers, there seems to be urgent need of increasing the role and contribution of institutions, in the study area, for the sake of improving the elementary infrastructure as well as enhancing the accessibility of farmers towards these institutions.

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