

Livelihood Security through Goat Farming in Tribal Areas of Rajasthan

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Abstract

The aim of present study was to assess the livelihood security of tribal farmers of in Rajasthan. We observed food, economic, health, education, social and overall livelihood security through goat farming. A total of 120 tribal goat farmers were selected from 12 villages from 6 blocks in 3 tribal dominated districts viz., Banswara, Dungarpur and Udaipur. Ten farmers from each village were selected purposively based on the number of goats. The selected goat farmers were grouped into three categories based on flock size as small (<25 goats, N=60), medium (26-50 goats, N=36) and large (>50 goats, N=24). In case of small farmers, table-2 revealed that the highest percentages of respondents were having very low level of livelihood security i.e. 43.33 per cent. At the same time, it was also found that 35.00 per cent were having medium level of livelihood security and 13 respondents (21.67%) were having high level of livelihood security, in the study area. In case of medium size farmers 50.00 per cent of the respondents were having low level of livelihood security and 33.33 per cent of the respondents were having medium level of livelihood security followed by 16.67 per cent respondents falling under high level of livelihood security. Similarly, 58.33 per cent of large famers fall under low level of livelihood security and 29.17 per cent of large farmers fall into medium level of security and only 12.50 per cent large farmers are having high level of livelihood security in the study area.

Keywords: Farmers, Goat Farming, Livelihood, Security, Tribal Farmer

Introduction

Goats are the world's oldest and among the first ruminants to be domesticated by human beings in South-Western Asia (Iran and Iraq) between 10000- and 6000-years BC. Around 80 per cent of global goat population is in the developing countries. Among them, India ranks second in the world population of goat. With the present population of 135.2 million, goats account for more than 25 per cent of the total livestock in the country and contribute Rs 106335 million annually to the national economy (19th Livestock Census, 2012). They provide food and nutritional security to the millions of marginal and small farmers and agricultural labourers by providing animal protein through meat and milk. There are about 34 well defined and recognized breeds of goats in India (NBAGR, 2018). Goats are among the main meat-producing animals in India, whose meat (chevon) is one of the choicest meat having huge domestic demand. Besides meat, goats, a multi-functional/purpose animal which provide other products like milk, skin, fibre and manure. Goat contributed 5.05 million tonnes of milk (3.67% of total milk production of 137.685 million tons) and 0.97 million tonnes of meat (15.56% of total production) during the year 2013-2014 (BAHS, 2015).

In India, Rajasthan is ranked first in goat population with a population of 21.66 million, (37.53%) of total livestock population in the state. Sirohi goat is the most preferred goat breed over other breeds in Rajasthan (Marwari and Jhakhrana). Goats are the backbone of rural economy particularly, in the arid, semi-arid and mountainous regions of Rajasthan. Goat farming is a suitable option for revenue generation for the small-scale farmers and tribal people as it requires a very low investment and can efficiently survive and sustain sparse vegetation and extreme climatic conditions. Best known as the "poor man's cow" or "mini cow" these magnificent animals are the best alternative source of additional income and milk contributing immensely to the poor man's economy. In pastoral and agricultural subsistence societies in India, goats are kept as a source of an insurance against disaster. Goats are generally managed under extensive production system and semi intensive system, where only at night shelter is provided. A major part of their fodder requirement is met out through grazing at waste and other common community lands.

India is a conventional home for about 645 tribal communities (population census, 2011). They are dispersed in almost all the states and union territories. The areas populated by tribals are mostly underdeveloped. They mostly reside in secluded villages or hamlets. The population of tribal in the country is 104 million, which is 8.2 per cent of the total population of the country whereas; the Scheduled Tribe (ST) population of Rajasthan State is 7,097,706 constituting 8.4 percent of the total ST population of India (Census, 2011). The Scheduled Tribes of the State constitute 12.6 percent of the total population (68548437) of the state. According to the 19th Livestock census, 2012 goats population in the districts of Banswara, Dungarpur and Udaipur which have been categorized as tribal districts in Rajasthan state (study area) is 38.52% of the total livestock population in Rajasthan.

Materials and Methods

In Rajasthan, tribal goat farmers predominantly reside in the districts of Banswara, Dungarpur and Udaipur. About more than 45 per cent resides in these three districts. These districts were purposely selected for present investigation due to highest population of tribal people whose one of the primary occupations is goat farming. The aim of present study was to assess the food, economic, health, education, social and overall livelihood security through goat farming by tribal farmers in Rajasthan. A total of 120 tribal goat farmers were selected from 12 villages from 6 blocks in 3 tribal dominated districts viz., Banswara, Dungarpur and Udaipur. Ten farmers from each village were selected purposively based on the number of goats. The selected goat farmers were grouped into three categories based on flock size as small (<25 goats, N= 60), medium (26-50 goats, N = 36) and large (>50 goats, N = 24). The data on feed intake and feeding management practices were recorded on-field. Categorization of livelihood security values was done on the basis of index develop by Ponnusamy K. (2006) and Eqbal, M. S. (2012).

Analysis of Data and Statistical Test Applied

The collected data from the farmers were scored, tabulated and analyzed in the light of the objectives set forth for the present study. Statistical measures used in this study include Mean, Standard error, Frequency, Percentage, Cumulative Square Root Frequency (CSRF) and SPSS (one-way ANOVA).

Results and Discussion

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In the study “livelihood security” had been conceptualized as a term comprising of five sub-indicators, such as food security, economic security, health security, educational security and social security. All these indicators were together found contributing in achieving the overall livelihood security of a respondent. The level and distribution of respondent in each sub-indicator of livelihood security in the study area have been presented under the following sub-headings. Categorization of livelihood security values with little modification on the basis index develop by Ponnusamy (2006) and Eqbal, (2012).

1. Food Security

Talking about the small farmers, Table 1 revealed that the highest percentages of respondents were having very low level of food security i.e. 46.67 per cent. At the same time, it was also found that 33.33 per cent were having medium level of food security and 12 respondents (20.00 %) were having high level of food security in the study area.

Table 1: Livelihood security through goat farming

S. No.	Variables	Small (60)		Medium (36)		Large (24)		Overall	
		Freq	%	Freq	%	Freq	%	Total	%
1	Food security								
	Low (<35%)	28	46.67	16	44.45	9	37.5	53	44.17
	Medium (35-48%)	20	33.33	12	33.33	9	37.5	41	34.17
	High (>48%)	12	20	8	22.22	6	25	26	21.67
	Total	60	100	36	100	24	100	120	100
2	Economic security								
	Low (<27%)	28	46.67	15	41.67	12	50	55	45.83
	Medium (27-42%)	18	30	13	36.11	8	33.33	39	32.5
	High (>42%)	14	23.33	8	22.22	4	16.67	26	21.67
	Total	60	100	36	100	24	100	120	100
3	Health security								
	Low (<31%)	30	50	16	44.44	13	54.17	59	49.17
	Medium (31-45%)	18	30	12	33.33	7	29.17	37	30.83
	High (45%)	12	20	8	22.22	4	16.67	24	20
	Total	60	100	36	100	24	100	120	100
4	Educational security								
	Low (<29%)	7	11.67	6	16.67	5	20.33	18	15
	Medium (29-43%)	8	13.33	9	25	8	33.33	25	20.83
	High (>43%)	45	75	21	58.33	11	45.84	77	64.17
	Total	60	100	36	100	24	100	120	100
5	Social security								
	Low (<32%)	28	46.67	16	44.45	10	41.67	54	45
	Medium (32-47%)	20	33.33	12	33.33	8	33.33	40	33.33
	High (>47%)	12	20	8	22.22	6	25	26	21.67
	Total	60	100	36	100	24	100	120	100

Precisely, in case of medium size farmers 44.45 per cent of the respondents were having low level of food security and 33.33 percent of the respondents were having medium level of food security followed by 22.22 per cent respondents falling under high level of food security. Similarly, 37.50 per cent of large famers fall under low level of food security and equal percentage of large farmers fall into medium level of security and only 25.00 per cent

large farmers were having high level of food security in the study area. The overall extent of food security in the study area was 44.17 per cent falling in low level of food security, 34.17 per cent in medium level and 21.67 per cent in high level of food security. This depicts the vulnerable condition of the respondents towards the food security. Since food security also includes cultivation of cereals and pulses, the overall food security was found to be low to medium as goat can contribute only meat, milk and income. This requires promotion of suitable food crops after studying the bio-physical conditions of the study area by experts and extension planners. Similar studies were reported by Ponnusamy (2006) and Ponnusamy and Gupta (2009).

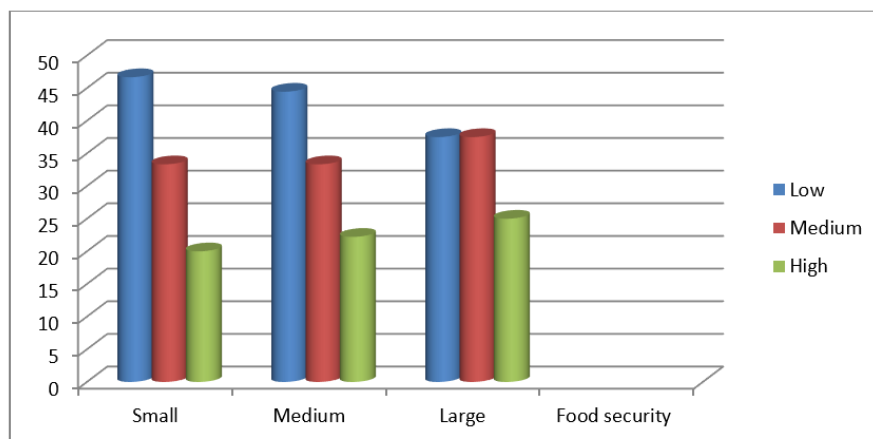


Figure 1: Food security

2. Economic Security

A perusal of the data in the Table 1 indicated that in case of small farmers, the highest percentage of respondents was having very low level of economic security i.e. 46.67 per cent. At the same time, it was also found out that 30.00 per cent were having medium level of economic security and 14 respondents (23.33%) were having high level of economic security. While talking about medium level farmers precisely, 41.67 per cent of the respondents were having low level of economic security and only 22.22 per cent of the respondents were having very high level of economic security, in the study area.

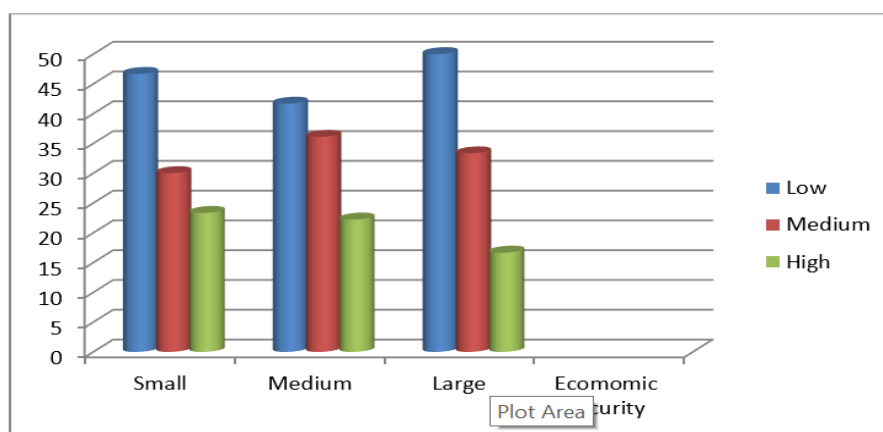


Figure 2: Economic security

Similarly, among large farmers, 50 per cent of them were having low level of economic security, 33.33 per cent were having medium level of economic security and only 16.67 per cent respondents were falling in high level of economic security. The overall extent of economic security in the study area was 45.83 per cent in low level of economic security. This indicates the necessity of increasing the economic opportunities for the farmers in the study area for enhancing the economic security of the farmers. Various government schemes of Rajasthan should be promoted among the farmers for enhancing the better livelihood opportunities as additional income is possible

through these alternative employment opportunities. Ponnusamy *et al.* (2017) reported that dairy farming can generate a good source of income as per their study on Pashu Sakhi model under Mahila Kisan Sashaktikaran Pariyojana (MKSP) in Rajasthan.

3. Health Security

From the close analysis of the Table 1 it can be seen that highest percentages of respondents were having low level of health security i.e. 50.00 percent, 44.44 per cent and 54.17 per cent respectively in small, medium and large farmers at the same time it was also found that 30.00, 33.33 and 29.17 percent were having medium level of health security in each of the three groups respectively. Talking about high level of health security only 20, 22.22 and 16.67 per cent respondents from each category were having high level of health security in the study area the overall extent of health security in the study area was 49.17 per cent falling in high level of food security, 30.83 per cent in medium level and 20.00 per cent in high level of health security.

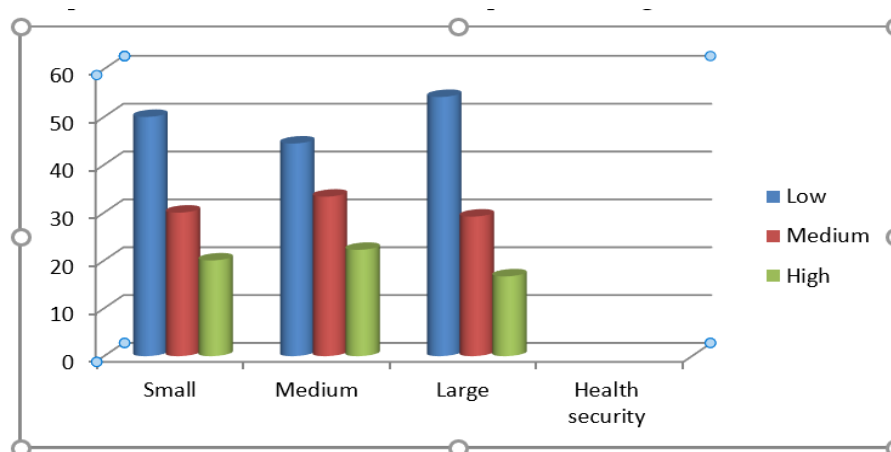


Figure 3: Health security

4. Educational Security

Lucid examination of the Table 1 revealed that in the case of small farmer highest percentage i.e. 75.00 per cent of respondents were having high educational security. At the same time, it was also found that 13.33 per cent were having medium level of educational security and 7 respondents (i.e. 11.67 per cent) were having high low of educational security, in the study area.

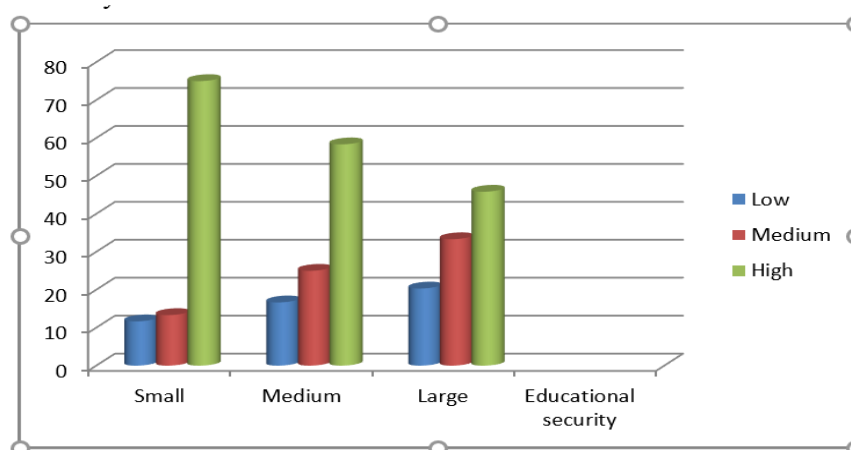


Figure 4: Educational security

Precisely, in case of medium size farmers 16.67 per cent of the respondents were having low level of educational security and 25.00 per cent of the respondents were having medium level of educational security followed by 58.33 per cent respondents falling under high level of educational security. Similarly, 20.33 per cent of large farmers fall under low level of educational security and 33.33 per cent of large farmers fall into medium level of security and

only 45.84 per cent large farmers are having high level of educational security in the study area. The overall extent of educational security in the study area was 15.00 per cent falling in low level of educational security, 20.83 per cent in medium level and 64.17 per cent in high level of educational security.

5. Social Security

An examination of the figures in the Table 1 indicated that in case of small farmers the highest percentages of respondents were having very low level of social security i.e. 46.67 per cent at the same time it was also found out that 33.33 per cent were having medium level of social security and 12 respondents (i.e. 20.00%) were having high level of social security. talking about medium size farmers precisely, 44.45 per cent of the respondents were having low level of social security and only 33.33 per cent of the respondents were having very medium level of social security and 22.22 per cent were having high level of social security, in the study area. Similarly, among large farmers 54.00 per cent of the large farmers were having low level of social security, 33.33 per cent were having medium level of social security and only 25.00 per cent respondents were falling in high level of social security. The overall extent of social security in the study area was 45.00 per cent in low level of social security, 33.33 per cent medium and 21.67 per cent were having high level of social security.

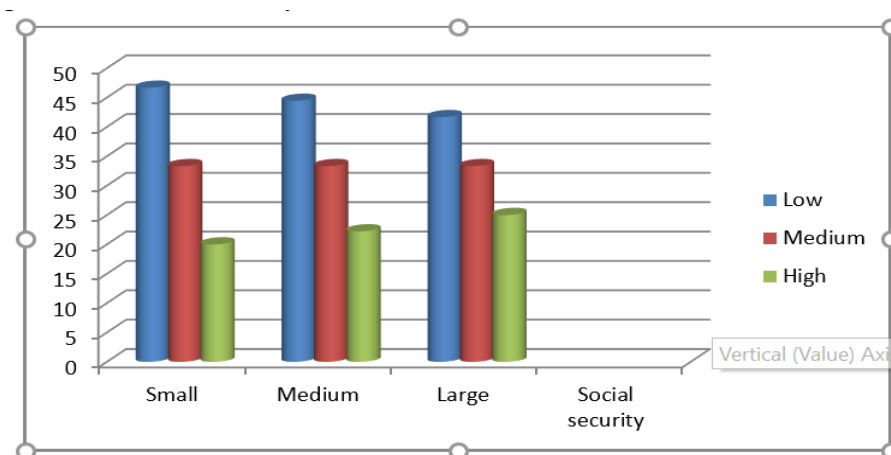


Figure 5: Social security

Overall Livelihood Security Through Goat Farming

Categorization of livelihood security values with little modification on the basis index develop by Ponnusamy (2006) and Eqbal (2012). In case of small farmers, Table 2 revealed that the highest percentages of respondents were having very low level of livelihood security i.e. 43.33 per cent. At the same time, it was also found that 35.00 per cent were having medium level of livelihood security and 13 respondents (21.67%) were having high level of livelihood security, in the study area. In case of medium size farmers 50.00 per cent of the respondents were having low level of livelihood security and 33.33 per cent of the respondents were having medium level of livelihood security followed by 16.67 per cent respondents falling under high level of livelihood security. Similarly, 58.33 per cent of large famers fall under low level of livelihood security and 29.17 per cent of large farmers fall into medium level of security and only 12.50 per cent large farmers are having high level of livelihood security in the study area.

Table 2: Existing overall livelihood security through goat farming

S. No.	Variable	Respondents (n=120)						Overall	
		Small (60)		Medium (36)		Large (24)			
1	Livelihood security index (overall)	Freq	%	Freq	%	Freq	%	Total	%
	Low (<37%)	26	43.33	18	50	14	58.33	58	48.33
	Medium (37-52%)	21	35	12	33.33	7	29.17	40	33.33
	High (>52%)	13	21.67	6	16.67	3	12.5	22	18.34
	Total	60	100	36	100	24	100	120	100

The overall extent of livelihood security in the study area was 48.33 per cent falling in low level of livelihood

security, 33.33 per cent in medium level and 18.34 per cent in high level of livelihood security. Similar results were reported by Ponnusamy and Gupta (2009 and 2010) who studies dairy based farming system with goat as a major component in the coastal agro-eco system of Tamil Nadu.

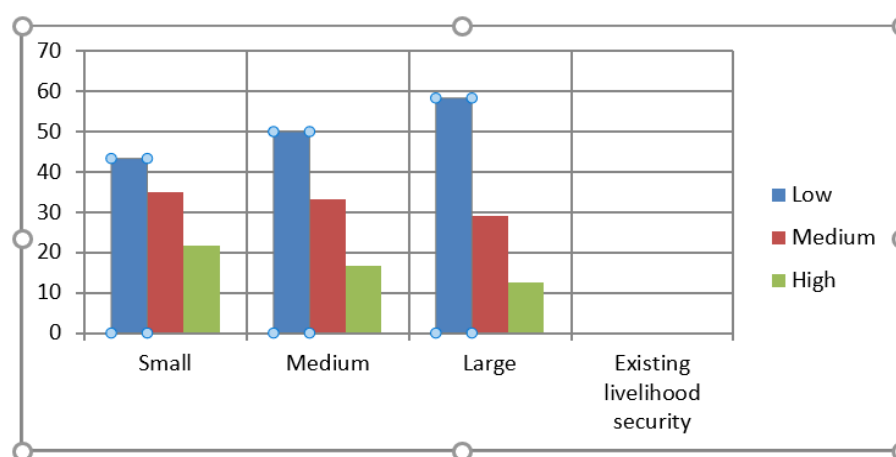


Figure 6: Existing overall livelihood security

Conclusion

The overall extent of food security in the study area was 44.17 per cent falling in low level of food security, 34.17 per cent in medium level and 21.67 per cent in high level of food security. The overall extent of economic security in the study area was 45.83 per cent in low level of economic security. The overall extent of health security in the study area was 49.17 per cent falling in high level of food security, 30.83 per cent in medium level and 20.00 per cent in high level of health security. The overall extent of educational security in the study area was 15.00 per cent falling in low level of educational security, 20.83 per cent in medium level and 64.17 per cent in high level of educational security. The overall extent of social security in the study area was 45.00 per cent in low level of social security, 33.33 per cent medium and 21.67 per cent were having high level of social security. The overall extent of livelihood security through goat farming in the study area was 48.33 per cent falling in low level of livelihood security, 33.33 per cent in medium level and 18.34 per cent in high level of livelihood security.

Conflict of Interests

There is no conflict of interest.

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