



Social Profiling of Tribal Farmers in Livestock-based Livelihood System

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ABSTRACT: The present study was aimed to analyse the social profile of farmers rearing livestock and the economy on the prevailing tribal livestock farming system. Analysis of primary data, obtained from sample respondents using a structured questionnaire revealed that, ownership of the landholding, livestock etc was 83.33% with males and 16.67% with females. Younger farmers of ≤ 45 years of age were 46.67% against elderly 53.33%. Overall cattle heads per family were 1.66 per farm family. Corresponding estimates for goats and poultry were 10.48 and 5.74, respectively. Livestock income recorded the highest positive correlation coefficient of 0.816 with goat heads and the lowest of 0.238 with poultry.

Keywords: Farming, Livelihood, Livestock, Tribal.

INTRODUCTION

Legacy of varied culture base in Odisha is derived from ancient times and is empowered with dense forest, rivers and landscapes, which have contributed immensely to livestock and poultry development with wide diversity. Its rich livestock genetic resource base has been strengthened by ancient Kalinga Empire with import of various high potential stock. Besides, numerous tribal ethnic communities have traditionally conserved varieties of livestock population over thousands of years.

Livestock sector plays an important role in rural economy of the State. This sector has the highest potential for supporting rural livelihood at the lowest per unit investment. Development of livestock sector therefore, is very important to rural prosperity including crop production. Bullock work force is still in use even with popularisation of mechanisation in crop production. The landless, small and marginal farmers possess the major ownership of livestock in the State. Further, rural women play a significant role in livestock production system and are directly involved in most of the components relating to management, feeding and health care of the livestock (Chauhan and Moorti, 1999). Odisha possesses good number of livestock heads providing supplementary income to the stakeholders. As per 19th Livestock Census report, 116 lakh cattle heads, 7.26 lakh buffaloes, 81.1 lakhs small ruminants and 199 lakhs poultry are in the State. The State has human population of about 41.97 million as per 2011 Census and share 3.47% of the population in the country. Among those, nearly 83% are in rural India. Home based traditional livestock production units have been proving as a major livelihood support

system for the majority of the rural poor, who are either landless or are small and marginal farmers with un-irrigated land. This situation is more pronounced in tribal community with tagging of custodians of native livestock and chicken breeds with unique qualities (Rao *et al.*, 2002 ; Ray *et al.*, 2015).

Mayurbhanj, the largest district among 30 districts in Odisha harbours 2.52 million people with 58.71% of tribes. Almost all the tribes rear livestock and poultry since generations mostly on ethical or cultural ground. However, this livestock system has been triggering additional family income enhancing livelihood of the stakeholders.

As per the Provisional Report of 19th Livestock Census, Mayurbhanj district has total bovine population- 8.45 lakh, small ruminants- 14.23 lakh (goat- 11.32 lakh, sheep- 2.91 lakh), pig- 0.24 lakh and poultry- 26.54 lakh. The animal population in Mayurbhanj per human head comes to 1.05 compared to 0.49 in Odisha. Therefore, the farming system in Mayurbhanj is more dependent on livestock. Various tribal ethnic groups have traditionally preserved varieties of livestock population over thousands of years in this district. These farmers are mostly raising animals through extensive or semi-intensive farming system. Again, the livestock biodiversity of Mayurbhanj is rich in goat and poultry genetic resources. The goat heads of 11.32 lakhs in Mayurbhanj district share 17.5% and population of 26.54 lakhs of poultry accounts for 13.3% of respective Odisha populations, implying a highly concentrated area in goat and poultry. The present study was aimed to analyse the social profile of farmers rearing livestock and the economy on the prevailing livestock farming system.

METHODOLOGY

Primary data from sample respondents were collected using a structured questionnaire. Focus Group Discussion was carried in each of sample village to capture the qualitative information and understand perception of the people. Data thus obtained were put to statistical analysis.

RESULTS AND DISCUSSION

The distribution of farmers across social profile is presented in Table 1. Analysing the gender of farmers in survey area revealed that, 200 (83.33%) farmers were males and 40 (16.67%) females, which is in line with the findings of Kavitha and Reddi (2007). This is the reflection of ownership of the landholding, livestock etc. Further, there was similar trend of male and female ownership in all the blocks with the highest percentage of females (30%) in Rairangpur and lowest of 5% in Bijatala block.

The overall average age of farmers was found as 47.43 years. Younger farmers of ≤ 45 years of age were 112

(46.67%) against 128 (53.33%) elderly farmers of more than 45 years of age in the survey area. However, there was significant dependency between age and block, revealing that, more elderly farmers were recorded in Bisoi, Jashipur and Bijatala blocks than younger ones. The reverse trend was noted in other three blocks.

Under matric farmers were 226 (94.17%) against 14 (5.83%) matric pass farmers in the present study. This is at par with the findings of Sathyarayan *et al.* (2010). The matric pass farmers were the inhabitants of Kaptipada and Bijatala block.

As the area is tribal dominated, 206 (85.83%) farmers were belonging to schedule tribe and rest 34 (14.17%) under other backward caste in the survey area, however the there was significant dependency between caste and block, revealing that, in Saraskana, the OBC farmers were 75% against 25% ST counterparts. This trend is contradictory to recording of 100% ST farmers in Bisoi, Kaptipada, Rairangpur and Jashipur blocks and 90% in Bijatala block.

Table 1: Distribution of farmers across social factors.

Factors		Block						Total	
		1	2	3	4	5	6		
Gender	Male	Count	34	32	28	32	36	38	200
		% within Sex	85.0%	80.0%	70.0%	80.0%	90.0%	95.0%	83.33%
	Female	Count	6	8	12	8	4	2	40
		% within Sex	15.0%	20.0%	30.0%	20.0%	10.0%	5.0%	16.67%
Age*	≤ 45	Count	14	24	32	12	26	4	112
		% within Age	35.0%	60.0%	80.0%	30.0%	65.0%	10.0%	46.67%
	> 45	Count	26	16	8	28	14	36	128
		% within Age	65.0%	40.0%	20.0%	70.0%	35.0%	90.0%	53.33%
Education	$< 10^{\text{th}}$	Count	40	30	40	40	40	36	226
		% within Edn	100%	75.0%	100%	100%	100%	90.0%	94.17%
	10^{th}	Count	0	10	0	0	0	4	14
		% within Edn	.0%	25.0%	.0%	.0%	.0%	10.0%	5.83%
Caste*	ST	Count	40	40	40	40	10	36	206
		% within Caste	100%	100%	100%	100%	25.0%	90.0%	85.83%
	OBC	Count	0	0	0	0	30	4	34
		% within Caste	.0%	.0%	.0%	.0%	75.0%	10.0%	14.17%

*Significant dependency between the factors

Blocks: Bisoi (1), Kaptipada (2), Rairangpur (3), Jashipur (4), Saraskana (5), Bijatala (6)

Average annual income from livestock sources was Rs.32714/- against Rs.15.265/- from crop production in the survey area and the livestock income source was mostly from goats. The degree of association between income from land and animal agriculture was found as -0.152. Though not significant, but there was a negative and weak correlation coefficient between crop and livestock earnings in the farm family and more than two times earning was obtained through livestock rearing. The degree of associations among the number of different species of livestock and the total annual income, attributed to livestock are presented in Table 2.

Livestock income recorded the highest positive correlation coefficient of 0.816 with goat heads and the lowest of 0.238 with poultry. The corresponding correlation with cow heads was 0.286. The degree of association of number of cows with number of goats and poultry were estimated as 0.261 and 0.233, respectively and that between goat and poultry numbers was 0.225 in the survey. But all the associations were positive and highly significant. This analysis reveals that, the livestock heads contribute significantly to the total income of the stakeholder; however, contribution of goat is more pronounced.

Table 2: Pearson Correlation Coefficients among components (N) of and income from livestock.

		Cow	Goat	Poultry	Income
Cow	Correlation coefficient	1	0.261**	0.233**	0.286**
	p value		.002	.006	.001
Goat	Correlation coefficient		1	0.225**	0.816**
	p value			.008	.000
Poultry	Correlation coefficient			1	0.238**
	p value				.005
Income	Correlation coefficient				1
	p value				

** . Correlation is significant at the 0.01 level (2-tailed).

Details of species of livestock across blocks are presented in Table 3. Overall cattle heads were 1.66 per farm family. Corresponding estimates for goats and poultry were 10.48 and 5.74, respectively, which corroborates with the findings of Mohanty *et al.* (2004) in Kalahandi goat and Bariah *et al.* (2008) in Keonjhar goats. The annual income from livestock sources was estimated as Rs.32714/- in the survey area. The average cow heads ranged from 1.15 to 2.50 across blocks with significant difference among blocks. The highest

average goat heads of 12.45 was recorded in Bisoi and Rairangpur against the lowest in Saraskana with 6.55 goats per family and significant differences among blocks were recorded. Average number of poultry ranged from 4.90 to 5.35 without any significant difference among blocks. It is ascertained that, all the livestock found in the survey area were non-descript or indigenous types except presence of 14 crossbred cows out of 466 heads and these 14 CB cows are owned by 6 farmers out of 240 farmers under study.

Table 3: Average heads of livestock across species and annual income from livestock.

Components	Pooled	Block					
		1	2	3	4	5	6
Cow	1.66	1.15 ^a	2.45 ^{bc}	2.50 ^c	1.42 ^{abc}	1.40 ^{abc}	1.30 ^{ab}
Goat	10.48	12.45 ^a	8.25 ^b	12.45 ^a	11.48 ^a	6.55 ^b	10.70 ^a
Poultry	5.74	4.90	4.90	7.35	5.55	5.50	6.35
Income from Livestock (Rs)	32714	23500 ^{ab}	22250 ^{ab}	41200 ^{bc}	43625 ^c	20400 ^a	34400 ^{abc}

*Averages with different superscripts differ significantly ($p < 0.05$) within a row

Blocks: Bisoi (1), Kaptipada (2), Rairangpur (3), Jashipur (4), Saraskana (5), Bijatala (6)

CONCLUSION

The tribal livestock system is based on low or nil input system without technological interventions and concentrated on indigenous livestock since generations. Livestock economics under prevailing system is mostly dependent on goats and poultry. So strategic breeding exploring individual superiority in all the species, incentives in management and market link to the produce and products of indigenous livestock may be beneficial in enhancing the livelihood of these farmers. Proper interpretation of the findings of this study would help strategizing development programme for livestock based livelihoods enhancement in the state.

REFERENCES

- Bariah, S. P. S., Rao, P. K., Patro, B. N., Dash, S. K. and Panda, P. (2008). Genetic analysis of indigenous goats of Keonjhar district of Odisha. *Indian Veterinary Journal*, **85**: 843-845.
- Chauhan, S.K. and Moorti, T.V. (1999). Income and employment pattern, In; Economics of Sheep Farming, Mittal Publication, New Delhi.
- Kavitha, L. and Reddi, M. S. (2007). Personal and socio-economic characteristics of farm women. *Journal of Research*, ANGRAU, **35**(1): 79-83.
- Mohanty, G. P., Mohapatra, A. K., Dash, S. K. and Sahoo, G. (2004). Study of management practices and performance of Kalahandi goats in Orissa. *Indian Journal of Animal Production and Management*, **20**(1-4): 92-95.
- Rao, P. K., Dash, S. K., Patro, B. N. and Nayak, S. (2002). Studies on Ganjam, Black Bengal goats and their crosses found in Orissa. *Indian Journal of Animal Management*, **18**(3-4): 135-138.
- Ray, S., Nayak, G. D., Dhal, S. K., Mishra, S. K., Sahoo, G., Mishra, S. and Dash, S. K. (2015). Non genetic effect on body weight and body measurement of indigenous goats at different stages of growth in north central plateau climatic zone of Odisha. *Exploratory Animal and Medical Research*, **5**(2): 196-201.
- Sathyanarayan, K., Jagadeeswary, V., Murty, V. C., Ruban, S. W. and Sudha, G. (2010). Socio-economic status of livestock farmers of Narasapur village – a benchmark analysis. *Veterinary World*, **3**(5): 215-218.