

Impact of Income on Livelihood of Tribal Goat Farmers of Odisha, India

ABSTRACT

The present investigation was carried out to find out the contribution of income in improving the livelihood of tribal goat farmers in the Kandhamal district of Odisha which was purposively selected as this district is highly concentrated with local goats. The sample of 112 goat farmers for this study was selected randomly from sixteen villages which were also selected from four randomly selected blocks of the district. With the help of the pre-tested interview schedule, the data for the study was collected personally by the researcher. The study employed ex-post facto research design and focussed group discussion to capture field data. Economic impact a component of overall livelihood impact was measured with the help of 10 validated statements in a five-point Likert type scale with scores on a continuum with 1 (strongly disagree) to 5 (strongly agree) for each of the statement. The study revealed that the farmers' personal savings, ability to spend money for children education, food, clothing and meeting medical expenses have increased due to goat farming. However, the overall economic impact is medium in nature indicating that the important stakeholders including government agencies involved in promotion of goat farming in the tribal areas should put emphasis on improving the business ability of the farmers which will be useful in improving the income level leading to strengthening of livelihood.

Keywords: Economic impact; livelihood; tribal farmers; goat farming; Odisha

1. INTRODUCTION

Goat farming is an age-old practice of tribal farmers of our country which not only provide income and nutritional security to them but also act as a useful possession to meet the emergency financial, social and cultural needs. It is one of the important supplementary occupations of the tribal community due to its various advantages like ease in handling by women and kids, low inputs

requirement for rearing, and ease managerial practices. But in the recent past, due to changes in the economic condition of the people and change in preference of food, the demand for chevon has increased in the country for which the people have started goat farming on a commercial basis [1]. The present-day goat entrepreneurs are increasing their knowledge and skills on goat farming, studying urban and rural markets for selling products, seeking opportunities to get credit, increasing extension and communication contact, etc. to get maximum benefit from the business[2]. Whereas a few years back, it was mainly associated with marginal, landless and tribal farmers of the country. The tribal farmers of Odisha, which constitutes 23 per cent of the population, predominantly rear the goat to meet their financial and social needs. The state is famous for the native goats like Ganjam, Black Bengal, Raighar, Badavihana which are in heavy demand for meat in the eastern part of the country. These breeds are unique in nature and adapt to the local situation very well. But the tribal farmers of the state are not getting enough return from the occupation due to their scale of operation and low level of knowledge and skill on scientific goat farming [2]. One of the important factors which contribute significantly for growth and promotion of any activity is the economic benefit received from the occupation. The urbaneducated entrepreneurs in goat farming are getting windfall profit due to their higher education level and ability to take risk. The same is not found amongst the tribal community. Studies by various authors have indicated that the economic factor plays significant role in opting right decisions for goat farming which leads towards the improvement of livelihood condition of the farming communities [3,4,5,6,7,8,9]. Keeping these facts in mind, the present investigation was carried out to study the impact of income on the livelihood of tribal famers of Kondhamal district of Odisha.

2. MATERIALS AND METHODS

One hundred and twelve goat farmers were selected randomly from a tribal dominated district, namely Kondhamal of Odisha which was having high concentration of local goats. Out of 12 blocks of the district, four blocks- Phulbani, Khajuripada, K. Nuagaon and Baliguda, were also selected randomly and from each block, four villages were also selected randomly. Thereafter, from each village seven goat farmers having minimum of 10 goats and rearing goats for minimum of five years, were selected randomly which constituted the sample size of 112 for this study. The selection of the goat farmers for the study was done with the help of local goat farmers, para-veterinary workers of the

blocks and field veterinary doctors. The study employed ex-post facto research design and focussed group discussions to capture field data. With the help of 10 statements validated by experienced faculties of College of Veterinary Science and Animal Husbandry, Odisha and experienced field officers of State Veterinary department of Government of Odisha, economic impact a component of overall livelihood impact was measured.

The responses of the goat farmers were recorded in a five-point continuum Likert type scale on a continuum with 1 (strongly disagree) to 5 (strongly agree) for each of the 10 statements. Before final data collection, the complete schedule was pretested with 10% non-sample neutral respondents to see what might be removed, added, or changed. After analysing the result of pre-testing of interview schedule, necessary changes in the construction of items and their sequences were made. Personal interview technique was used with the help of pre-tested structured questionnaire for data collection. The interviewer used local language (i.e. Odiya) to obtain answer from the respondents. Wherever required, focussed group discussion was made to get deeper insight into the economic contribution of goat farming. Enough probing and explanation were done to ensure that the respondents had a thorough comprehension of the questions to receive an adequate response. Afterward, group talks with the respondents were held in certain cases to confirm the individual replies. The data collected from the respondents were edited, tabulated and analysed using suitable statistical tools i.e. frequency, percentage, mean, standard deviation and Pearson's coefficient of correlation to draw the inferences.

3. RESULTS AND DISCUSSION

An economic impact examines the effect of an event or intervention of a programme on the individual economy. In measuring the economic impact on farmers, their increase in personal savings in banks and construction of house are taken into account. Besides this, the household expenditures such as spending on children's education, medical emergencies and loan repayment are also taken into consideration. In addition to these two criteria, the amount of money gained from scientific rearing to invest in further expansion of farm to earn throughout the year is also taken into account.

3.1. Economic Impact on Livelihood of Goat Farmers

Increased income of farmers, allowing them to spend the money on different household expenditures and save money for the future, are the most often assessed economic consequences. In this study,

ten statements were carefully crafted to meet the varied expenses emerging from the farmers' increased revenue. The 112 recipients were presented these 10 questions, and their replies were compiled on a five-point scale (5 to 1).

**Table 1: Response of the respondents to the statements on Economic Impact
n=112**

Sl.No.	statement	responds					mean
		SA	A	UD	DA	SD	
1	Increased in personal savings in bank account	62	28	14	3	5	4.24
		55.35	25	12.5	2.67	4.46	
2	Constructed/renovated a pucca/semipucca house on my own land from the profit of goat business	27	53	12	12	7	3.75
		24.32	47.74	10.81	10.81	6.30	
3	Able to spend money for my children education	23	60	12	10	6	3.71
		20.72	54.05	10.81	9.00	5.40	
4	Able to spend money for emergency medical care of my family members	42	37	19	6	6	3.87
		38.18	33.63	17.27	5.45	5.45	
5	My spending on food items has increased than before	16	31	40	23	1	3.38
		14.41	27.92	36.03	20.72	0.90	
6	Now I am able to spend more on clothing of my family members	20	27	32	21	10	3.30
		18.18	24.54	29.09	19.09	9.09	
7	Now I am not borrowing money from private money lenders	17	48	26	13	7	3.48
		15.31	43.24	23.42	11.71	6.30	
8	My lending money on credit has increased	24	30	38	14	5	3.45
		21.62	27.02	34.23	12.61	4.50	
9	Able to invest for purchase of additional goats and inputs for expansion of farms	25	32	36	14	4	3.55
		22.52	28.82	32.43	12.61	3.60	
10	My profit from goat rearing has increased	28	44	22	11	5	3.70
		25.45	40	20	10	4.54	
Mean score		36.69					
The figures in upper row are frequency and lower is percentage							

The response of the 112 tribal goat farmers to these 10 income impact statements are presented in Table 1. The analysis of data relating to economic impact on the farmers revealed that 55.35 percent of the respondent agreed to the statement of increased in personal savings in the bank account due to increased income from goat farming whereas 4.46 percent of the respondents did not agree to the

question. When asked about the construction of semi pucca/pucca house on their own land through goat rearing, 47.74 % of the respondents agreed while 6.30% disagreed to the statement. The high mean score for house construction implies that most of the respondents have constructed a semi pucca or pucca house out of the income from goat rearing [1]. When asked about the ability to spend the required amount for children education, 54.05% of the respondents agreed to the statement while 5.40% of the respondents disagreed to the statement. Similarly, when asked about ability to spend for emergency medical care of the family members, 38.18% of respondents expressed their ability to bear the expenses and 5.45% expressed their inability. When asked about spending on food items, 14.41% agreed that their spending on food items has increased whereas 0.90% disagreed. When asked about spending on clothing, 18.18% agreed that their spending on clothing items has increased due to goat farming. When asked about repayment of borrowed money to the private money lenders 15.31% agreed that they have already repaid the money borrowed from money lenders. When asked about lending money on credit to others, only 21.62% agreed that they have lent money to others whereas rest did not lent money to others. When asked about your ability to increase the strength of the farm by purchase of additional goats, 22.52% agreed that they have required ability to add additional goats to their existing farm, 40 % of goat farmers agreed that their profit has increased due to goat farming whereas 4.54% farmers did not agree to the statement. The overall mean score of economic impact on beneficiaries was 36.69 5 which is a positive sign for the economic prosperity.

Table 2: Distribution of beneficiaries as per Economic Impact

Economic impact				Remarks
Sl. No.	Impact range	Frequency	Percent	
1	High level impact (Mean+1S.D) >42.64	21	15.17	Maximum score=50 Minimum score=10
2	Medium level income (Mean+1S.D) to (Mean-1S.D)	74	66.07	Mean=36.68 S.D.=5.96
3	Low level impact (Mean-1S.D). <30.72	17	18.75	

The distribution of the respondents on the basis of economic impact due to goat rearing is presented in the table 2. The table above revealed that 66.07% of the respondents had medium level of economic impact due to goat farming followed by 18.75% and 15.17% respondents were having high level and low-level economic impact, respectively. Studies by various authors indicate that the goat rearing enterprise made significant contribution to the economic welfare of poor people and creation of employment opportunities to rural people [5,6,7,8,9,10].

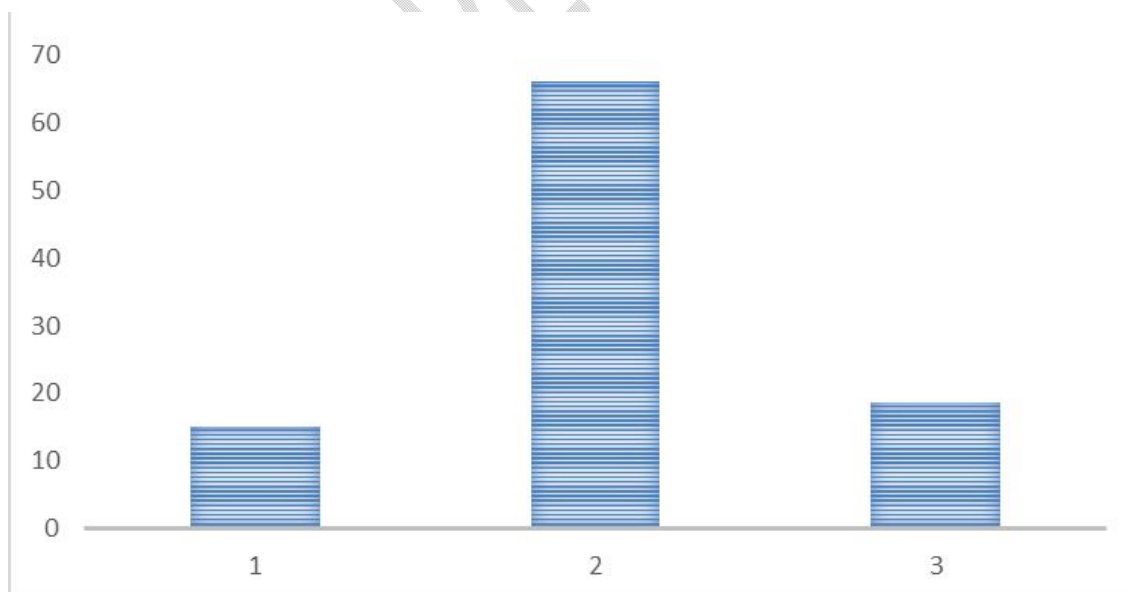


Fig 1: Distribution of respondents according to level of Economic Impact

3.2 Correlation Analysis of Selected Socio-economic Variables of Respondents with Economic

Impact on Respondents

Correlation analysis of various selected socio-economic variables of respondents with economic impacts gives an indication of positive and negative association between variables. The data of selected socio-economic variables with economic impact were subjected to zero order Pearson's correlation coefficient and findings are presented in the table 3.

Table 3. Correlation analysis of selected socio-economic variables of respondent with economic impact on respondent

	Age	Education	No of Goats owned	Economic Impact
Age	1			
Education	-0.160*	1		
No of Goats Owned	-0.010	0.828**	1	
Economic Impact	-0.061	0.077	0.218**	1

The analysis of above data reveal that age is negatively correlated with the economic impact, whereas education is positively correlated. The number of goats owned by the respondents was found positively and significantly correlated with the economic impact of goat rearing on the livelihood of farmers. The similar type of findings related age of the respondents, education and number of goats owned by the farmers with economic impact on livelihood have been reported by many researchers [10,11,12,13].

4. CONCLUSION AND RECOMMENDATION

The study revealed that there is medium level of economic impact on livelihood of tribal goat farmers. The age and education of the tribal goat farmers are important attributes to be kept in mind while promoting goat farming in the tribal areas of the country. All stake holders involved in the development activities including state agencies, development organisations, research institutions and individual citizen may play important roles in communicating and motivating the farmers to adopt scientific goat rearing to get maximum benefit from the occupation. The authors emphasize that no livelihood improvement is successful without effective communication strategies having commercial inputs in goat farming. Therefore, the government agencies, non-government organisations and others should help farmers in providing relevant information and improving skills of the farmers to get more profits in the present goat business scenario prevailing in the country.

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REFERENCES

1. Sen, A.R., Santra, A. and Karim, S.A. Carcass yield, composition and meat quality attributes of sheep and goat under semi arid conditions. *Meat Sci.*, 2004. 66 (4) : 757-763.
2. Das, B.C., Sahoo, A., Sant, S. and Vandre, R. K. Impact of Communication on Livelihood of Tribal Goat Farmers of Kandhamal District of Odisha, India. *Asian Journal of Advances in Agricultural Research*, 2024. 24(6), 96–101.
3. Budisatria IGS, Udob HMJ. Goat-based aid programme in Central Java: An Effective Intervention for the Poor and Vulnerable, *Small Ruminant Research*, 2013; 109(1):76-83.
4. Ahmad S, Fayaz M, Ali. G. An Economic Analysis of Goat Rearing in Kohistan District, Khyber Pakhtunkhwa, *Journal of Entomology and Zoology studies*. 2015; 3(3):484-488.
5. Panda R, Das B.C. A Comprehensive study on Goat Finance in Mayurbhanj District of District of Odisha. Unpublished M.V.Sc thesis submitted to OUAT, Odisha. 2017.
6. Devendra C. Investments on Pro-poor Development Projects on Goats: Ensuring Success for Improved Livelihoods, *Asian-Australian Journal of Animal Science*, 2013;26(1): 1-5.
7. Sourav C, Ghosh RK, Biswas S, Goswami A. Adoption behaviour of the Tribals in relation to goat keeping. *Livestock Research for Rural Development*. 2005;17(9); Retrieved May 13, 2024, from <http://www.lrrd.org/lrrd17/9/chan17107.htm>
8. DFID, Sustainable Rural Livelihoods Guidance Sheet. <https://www.livelihoodscentre.org/documents/114097690/114438878/Sustainable+livelihoods+guidance+sheets.pdf/594e5ea6-99a9-2a4e-f288-cbb4ae4bea8b?t=1569512091877>, accessed on May 13, 2024.
9. Sarangi M, Swain P. Impact assessment of National Mission for Protein Supplement

(NMPS) for goat development Programme in Coastal District of Odisha. Unpublished M.V.Sc thesis submitted to OUAT, Odisha. 2017.

10. Mohanty M, Das B.C. Economic Impact of Goat Farming on Livelihood of Goat Farmers of Nabarangpur District of Odisha. Unpublished M. V. Sc thesis submitted to OUAT, Odisha. 2018.
11. Kosgey IS, Rowlands GJ, Arendonk JAM, Baker RL. Small ruminant production in small holder and pastoral farming systems in Kenya, Small Ruminant Research. 2008;77(1):11-24.
12. Soni RL, Berathi R and Rathore RS. 2011. Socio-economic impact of the Improved Goat Rearing Practices on Tribals, Rajasthan Journal of Extension Education,19(1): 62-65.
13. Manzi M, Mutabazi J, Hirwa CD and Kugonza DR. 2013. Socio economic Assessment of Indigenous Goat Production System in Rural Areas of Bugesera District in Rwanda, Livestock Research for Rural Development, 25(11): 111-116.

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