Sheep Rearing in Yadgir, Karnataka: A Comprehensive Study on Factors Affecting Sheep Rearing and Reasons for Liquidation of Kenguri Sheep

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Authors' contributions

This work was carried out in collaboration among all authors. Author KMG designed the study, performed the statistical analysis, wrote the protocol, and wrote the first draft of the manuscript. Authors CJ and SNA managed the analyses of the study. Authors JSK, SM and K managed the literature searches and did minor grammatical changes. All authors read and approved the final manuscript.

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ABSTRACT

The important aspects of liquidation of Kenguri sheep and purpose of its rearing were studied during the experiment. Total forty sheep farms, 20 each in intensive and extensive rearing systems were selected randomly based on their accessibility in study area Yadgir district of Karnataka, India. The main factors of liquidation and purpose of sheep raising were tabulated by calculating frequency and percentage values. Reasons like agriculture purpose (100.00%) and domestic expenses (90.00%) were having sometimes and occasional frequencies under liquidation of sheep in intensive rearing system majorly. Likewise, domestic expenses (80.00%) and repay loan (80.00%) were having equal weightage of sometimes and occasional frequencies in extensive rearing system regarding sheep selling. Income generation (100.00%) and hereditary acquisition (95.00%) were the major and minor intrinsic factors and high demand for mutton production was major extrinsic factor in intensive rearing system. Employment (70.00%) and investment and growth (75.00%) were the major and minor intrinsic factors and more lucrative (90.00%) was the major extrinsic factor in extensive rearing system. The findings of this evaluation will pave the path for profitable selling and systematic rearing of sheep to the farming community in further days.

Keywords: Liquidation of sheep; rearing purposes; income generation; hereditary acquisition; domestic expenses; farming; quality attributes; Wool Producer's.

1. INTRODUCTION

According to [1] there were 195 One Time Grant Sanctioned Sheep and Wool Producer's Co-operative Societies in 2015–16 in Karnataka. The typical pricing range in the marketplaces analysed was between Rs 180 and Rs 200 per kilogram of live body weight [2]. In order to improve the market value and standard of living for shepherds, [3] looked at the market demand for sheep as well as quality attributes and management techniques.

According to a recent estimate of 2020, there are 6.7 lakh Kenguri sheep in Karnataka [4]. Because of the increased demand for mutton due to its high nutritional content, it is imperative to raise the quality of sheep used to produce mutton [5].

The majority of the sheep farmers (85%) sold their animals when they needed money for household expenses, while lesser percent (15%) of them sold them to pay off their loan. The animal's price was determined by its body conformation [6]. The tiny system of ruminant markets in southern India's several agroclimatic zones found chaotic marketing of small ruminants [7]. Injured animals were sold for a lower price than healthy animals as found by [8].The farmers in the research area, on the other hand, used a variety of strategies to generate income from the sale of small ruminants, with roughly 89.3 percent of them being strategic in

this respect, targeting the festive seasons for animal marketing [9].

Sheep and goats were the cheapest and most consistent protein sources for the households who kept the animals, despite the ever-increasing need for animal protein [10,11]. The animals were sold to customers who may require small ruminants for social functions; however, the rearers slaughtered the animals for personal or household functions [12]. Interactions with these sheep and goat farmers demonstrated that such intentionally generated cash was used to cover major household demands ranging from debt repayment to daily essentials [13,14].

2. MATERIALS AND METHODS

2.1. Sheep Farm Visit

The study was carried out in January and February of 2022, over a period of two months. The research area, Yadgir, is located in the Northern Eastern Dry Zone of Karnataka, 389 meters above normal sea level. It is located at latitude 16° 15' N and longitude 77° 20' E [15]. Rainfall in this area ranges from 640 to 810 mm annually on average [16]. There are forty sheep farms including extensive and intensive sheep farms that were selected at random basis for examination. In intensive farms, the average flock size is between 35 and 300, while in extensive farms, it typically ranges from 25 to 1480. The farmers were notified beforehand

about the trip to each sheep farm by teleconference.

2.2. Method of Data Collection

The scheduled questionnaire structured for the study was used for collecting data and assessing the reasons for liquidation of sheep and factors affecting purpose of sheep rearing through on-spot evaluation in a field setting in the particular study area.

2.3. Statistical Analysis

The results were collected using statistical tools like frequency and percentage values using IBM SPSS version 16.0 software.

3. RESULTS AND DISCUSSION

3.1. Reasons for Liquidation of Sheep

The reasons for liquidation having sometimes frequency are agriculture purpose (100.00%), to reduce flock (80.00%), to cull unproductive/aged (90.00%) in intensive rearing system and in case of extensive rearing system reasons having sometimes frequency are for other animal purchase (75.00%), domestic expenses (80.00%), agriculture purpose (55.00%), to reduce flock (70.00%) and to cull unproductive/aged (60.00%) in (Table 1).

Reasons having occasional frequency are home meat consumption (85.00%), other animal purchase (80.00%), domestic expenses (90.00%), for repaying loan (75.00%), religious activity (70.00%) under intensive rearing system and in extensive rearing system the occasional reasons for liquidation are home meat consumption (60.00%), for repaying loan (80.00%) and religious activity (85.00%) from (Table 1).

The poverty level of livestock farmers in the rural areas forced the farmers to rear sheep which can be a basic livelihood needs for them. These results were in compliance with the findings of [6,8].

3.2. Factors Affecting Purpose of Rearing Sheep

Diversified farming (95.00%), investment and growth (85.00%), money saving option (80.00%), income generation (100.00%), employment (90.00%), as a prestige value (75.00%), high demand for mutton (90.00%), more youth attraction towards sheep farming (70.00%) and more lucrative (75.000%) were the major factors; and utilization of crop residues (90.00%), hereditary acquisition (95.000%) and source of manure for crops (80.00%) were the minor factors in intensive rearing system (Table 2).

Money saving option (60.00%), income generation (70.00%), employment (70.00%), as a prestige value (60.00%), high demand for mutton (70.00%), more lucrative (90.00%) were the major factors; and diversified farming (60.00%), investment and growth (75.00%), utilization of crop residues (70.00%), hereditary acquisition (90.00%), source of manure for crops (70.00%) were the minor factors, whereas more youth attraction towards sheep farming were equally a major (50.00%) and minor (50.00%) factors in extensive sheep rearing system (Table 2).

Since, there was more demand for quality mutton which might be having better nutritional factors for good health management in humans which serves the purpose of poor farmers livelihood. The similar findings were reported by [11,13].

Table 1. Reasons for liquidation of Kenguri sheep

S No.	Particulars	Intensive Sometimes	(n=20) Occasional	Extensive Sometimes	(n=20) Occasional
1	Home meat consumption	3 (15)	17 (85)	8 (40)	12 (60)
2	Other animal purchase	4 (20)	16 (80)	15 (75)	5 (25)
3	Domestic expense	2 (10)	18 (90)	16 (80)	4 (20)
4	Agriculture purpose	20 (100)	0 (0)	11 (55)	9 (45)
5	Repay loan	5 (25)	15 (75)	4 (20)	16 (80)
6	To reduce flock	16 (80)	4 (20)	14 (70)	6 (30)
7	To cull unproductive/aged	18 (90)	2 (10)	12 (60)	8 (40)
8	Religious activity	6 (30)	14 (70)	3 (15)	17 (85)

n- Sample size, values outside the parenthesis are frequencies and values in the parenthesis are percentages

Table 2. The distribution of Kenguri sheep farmers based on purpose of rearing sheep

S No.	Motivating factors	Intensive (n=20)		Extensive (n=20)	
		Major	**Minor**	**Major**	**Minor**
a)	**INTRINSIC FACTORS**				
1	Diversified farming	19 (95)	01 (5)	08 (40)	12 (60)
2	Investment and growth	17 (85)	03 (15)	05 (25)	15 (75)
3	Money saving option	16 (80)	04 (20)	12 (60)	08 (40)
4	Income generation	20 (100)	00 (0)	14 (70)	06 (30)
5	Employment	18 (90)	02 (10)	14 (70)	06 (30)
6	Utilization of crop residues	02 (10)	18 (90)	06 (30)	14 (70)
7	Hereditary acquisition	01 (5)	19 (95)	02 (10)	18 (90)
8	Source of manure for crops	04 (20)	16 (80)	06 (30)	14 (70)
9	As a prestige value	15 (75)	05 (25)	12 (60)	08 (40)
b)	**EXTRINSIC FACTORS**				
1	High demand for mutton	18 (90)	02 (10)	14 (70)	06 (30)
2	More youth attraction towards sheep farming	14 (70)	06 (30)	10 (50)	10 (50)
3	More lucrative	15 (75)	05 (25)	18 (90)	02 (10)

n- Sample size, values outside the parenthesis are frequencies and values in the parenthesis are percentages

4. CONCLUSION

Sheep selling of the farmers depended on major reasons such as domestic expenses and for repaying loan in intensive and extensive rearing systems, respectively. Income generation and high demand for mutton are the major intrinsic and extrinsic factors under intensive rearing system and Employment and more lucrativeness are the major intrinsic and extrinsic factors in case of extensive rearing system. Finally, it can be concluded that the economy and poverty level of remote area farmers played the key role in sheep marketing. So, the exquisite analysis of these factors and reasons will escalate the rearing and marketing systems of shepherds in future.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Biradar Sathishchandra. Study on the market demands for quality attributes of small ruminants and management strategies towards improving market value and livelihood of shepherds. Ph.D. thesis, Veterinary College, Hebbal, Bengaluru, Karnataka, India; 2016.
2. Gowane GR, Akram N, Misra SS, Chopra A, Sharma RC, Kumar A. The breeding structure for the small ruminant resources in India. Tropical Animal Health and Production. 2020;52(4):1717-1724.
3. Hallad SC, Reddy GV, Kumbar D. Studies on Variability of Rainfall over North-Eastern Dry Zone of Karnataka: A statistical analysis. International Journal of Environment and Climate Change. 2023;13(12):272-289.
4. Karnataka Sheep and Wool Development corporation Ltd., Government of Karnataka; 2015.
Available:https://kswdcl.karnataka.gov.in
5. Kuldeep P, Karim SA, Sisodia SL, Singh VK. Socio economic survey of sheep farmers in Western Rajasthan. Indian Journal of Small Ruminants. 2006;12(1):74-81.
6. Kulkarni MD, Khanvilkar AV, Yadav GB, Khasnis MW, Ambore BN. Sheep Management for Upliftment of Marginal Farmers. Veterinary World. 2008;1:378-379.

7. Lavania P, Singh PK. Goat marketing practices in Southern Rajasthan. The Indian Journal of Small Ruminants. 2008;14(1):99-102.
8. Lawal-Adebowale OA. Dynamics of ruminant livestock management in the context of the Nigerian agricultural system. Livestock production. 2012;4:1-20.
9. Mastanbi S, Subrahmanyeswari B, Sharma GR. Analysing the socio-personal, economic profile and preparedness of sheep farmers. International Journal of Science, Environment and Technology. 2017;6(3):1641-9.
10. Pradeep. Meat production and marketing of small ruminants in Karnataka - An exploratory study, M.V.Sc Thesis, Veterinary College, KVAFSU, Bangalore. 2018.
11. Rajanna N, Mahender M, Thammiraju D, Nagalakshmi D, Srinivasa Rao D. Socio-Economic Status and Flock management practices of sheep farmers in Telangana region of AP. Veterinary Research. 2012;5(2):37-40.
12. Ramesh D, Meena HR, Meena KL. Analysis of Small ruminant market system in different agro-climatic zones of Southern India. Veterinary World. 2012;5:288-293.
13. Shanwad UK, Shankergoud I, Janagoudar BS, Srinivas AG, Biradar V. Influence of seasonal and annual rainfall variability on crop planning in north eastern dry zone (Zone-2) of Hyderabad Karnataka Region. Karnataka Journal of Agricultural Sciences. 2015;28(5):768-770.
14. Sireesha K. A study on sheep production practices in Guntur district of Andhra Pradesh. M.V.Sc. Thesis, N.T.R. College of Veterinary Science, SVVU, Gannavaram, Andhra Pradesh, India. 2011.
15. Thilakar P, Krishnaraj R. Profile characteristics of sheep farmers: A survey in Kancheepuram district of Tamil Nadu. Indian Journal of Field Veterinarians (The). 2010;5(3):35-36.
16. Thiruvenkadan AK, Karunanithi K, Purushothaman MR. Socio-economic status of the mecheri sheep farmers and economics of rearing under farmer's management. The Indian Journal of Small Ruminants. 2004;10(2):117-122.