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Economics and marketing analysis of sheep production in Raichur district of Kalyana Karnataka, India

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Abstract

Small ruminants play an essential role in the Indian economy and are a source of livelihood and employment to millions of rural households. Its share of agricultural G.D.P. is already 33 per cent and is quickly increasing. This growth is driven by the rapidly increasing demand for livestock products, this demand being driven by population growth, urbanization and rising incomes in developing countries. Sheep is predominantly maintained on natural vegetation on common grazing lands, wastelands and fallow lands, stubbles of cultivated crops and top feeds. The study examined the cost and return and marketing channel of sheep management practices in the Raichur district of Karnataka State in 2018-19. It focuses on the profitability of sheep farming in the study area. Data were collected from 120 sheep farmers employing a random sampling technique to which scheduled were administered. The net returns from sheep rearing were around Rs. 39, 455.32 per herd per year in the case of small farmers, followed by Rs. 94, 737.63 per herd per year and Rs. 129836.37 per herd per year in medium and large sheep farmers. It is also indicated that majority (71.67%) of the sheep farmers sold their sheep to sale producer-village trader-butcher-consumer (Channel II), followed by 54.17 per cent of the sheep farmers sale through producer-wholesaler-butcher-consumer (Channel III), 36.66 per cent of the farmers sale to Producer-village trader-wholesaler-butcher-consumer (Channel IV) and 29.16 percent of sheep farmers sold their sheep to producer-butcher-consumer (Channel I). A policy and research emphasis should be geared toward feeds production at an affordable price to the farmers and educated on how to formulate local feeds to reduce cost and access to meals for better efficiency.

Keywords: cost and returns, management practices, sheep marketing channel

Introduction

Agriculture is the key development in the rise of sedentary human civilization, whereby farming of domesticated species created the food surplus that nurtured the development of civilization. Agriculture or farming is the cultivation of crops and breeding of animals for food, fibre, bio-fuel, medicinal purposes and other products used to sustain and enhance human life. Agriculture, being a means of livelihood of almost two third of the population in the country represents India's most important economic sector. Even though due to increasing population pressure in India, while area under cultivation is static or even shrinking, which demands intensification of cropping and allied activities. Hence animal husbandry is also a main source of sustenance and it plays an important role in the national economy and socio-economic development. The total value of the current output of livestock sector is estimated at 3, 86,246 cores, which hold the share of 4.11 per cent of the Indian Gross Domestic Product (GDP) (FAO, 2017). As per 19th Livestock census, 2012 India's livestock sector is one of the largest in the world with a holding of 11.60 per cent of world livestock population sheep 65.10 million (7.14%). Sheep population ranks third in the world. Karnataka is one of India's most significant cattle. It adds to the sheep and goat population of the country roughly 7%. Among livestock production activities, sheep farming is essential for a large population of small and marginal farmers and landless agricultural labourers. In a lack of seasonal rains, leading to crop failure, rearing sheep gives a helping hand to the farmers. Sheep are multi-purpose animals, producing meat, milk, skins and wool/hair. Sheep production is a crucial sector of human activity (Zygoiannis *et al.*, 2006) [11]. Therefore sheep are affectionately labelled as mortgage lifters by the rural poor (Kumaravelu *et al.*, 2008) [4]. It farming requires low capital and not much-specialized machinery compared with most other agricultural production alternatives. With their small body size, high productive capacity and rapid growth rates, sheep is ideally suited for production by resource-poor smallholders.

Sheep thrive in a wide variety of environments. They require less capital because they can be completely maintained on pastures and agricultural waste products. A flock of sheep can provide families with food each day in milk, but only in limited parts of the world sheep are milked for dairy food. Sheep milk is an excellent raw material for the milk-processing industry, especially cheese production. Sheep are gregarious, and they prefer to cluster together. The tendency of these animals to cluster facilitates their management and makes it easy to discover any abnormalities in the flock and sick animals often withdraw or lag (Ensminger *et al.*, 1986) [2]. So effective product marketing is one of the most critical aspects of business enterprises to successfully market products, one must understand market dynamics, help make immediate marketing decisions, and design future production strategies. Unfortunately, under the traditional management system, the animal depends mostly on household waste and bush grazing, which do not provide adequate nutrition for optimum production or performance division and effective cost and returns management and low Marketing channels are very important in the farming sector despite of all the contributions the livestock sub-sector is a relatively neglected part of agriculture with its supporting services collapsing well ahead of others (Oni. 2006) [5]. It is necessary to carry out research on cost and return and different marketing channels sheep to ascertain the profitability of scarce resources used by the farmers to maximize their profit in the long run.

Material and Methods

The ex-post-facto design of social research was used in the present study because the researcher has no control over the independent variables that have already occurred. The present study was conducted in the Raichur districts of Karnataka state of India in 2017-18.

Selection of taluks: There are five taluks in the Raichur district, *i.e.*, Devadurga, Lingsugur, Manvi, Raichur and Sindhanur. In these taluks, Lingsugur and Raichur taluks were purposively selected as study areas based on their highest number of sheep population for the present investigation.

Selection of villages and respondents: Six villages from each taluk were selected based on the highest sheep population. Thus, total 12 villages were selected from two selected taluks. A list of farmers who possess sheep from each selected village were prepared with the help of A.A.O.s and veterinary officer from each selected village 10 sheep farmers were selected with the help of a simple random sampling procedure to make up the total number of 120 sheep farmers for the present study.

The level of scientific management practices is operationalized as the extent to which one makes the use of the recommended practices in sheep rearing. In this study, the degree of scientific management practices was measured on the recommended management practices with respect to kid management, feeding management, general and housing management and breeding management, health care practices and overall management. Score was measured on a three-point continuum *viz.* ‘Always’, ‘Occasionally’ and ‘never’ with a score of 2, 1 and 0, respectively. The total score for a respondent is obtained by summing up the score obtained on each practice. One respondent could get any score in between 0-20 for each scientific management practice, procedure followed by Vijay Kumar with appropriate modification. And

qualitative data were generated through personal schedule along with participatory observation, interaction and discussion with key informants. Data thus generated were analyzed by calculating simple mean, frequencies and percentages.

Statistical methods used for data analysis

Total cost = Fixed cost + variable cost.

Gross returns = Sale of animal + Sale of manure.

Net return = Gross return - Total cost.

$$\text{B: C Ration} = \frac{\text{Gross Returns}}{\text{Total Cost}}$$

Results and Discussion

The Table 1 data reveal that, the overall scientific sheep management practices followed by sheep farmers it is indicated that 45.85 per cent of the sheep farmers belongs to the medium level scientific sheep management practices, whereas 39.17 per cent of the sheep farmers high level scientific sheep management practices and 15.00 per cent of them are low level in scientific management practices of sheep. The possible reason for the finding could be attributed to their overall medium scientific sheep management practices of the sheep farmers may be due to management necessarily is a combination of various functions of planning, organizing, decision making and co-ordinating of activities to improve overall profits. The sheep farmers were middle aged, had medium flock size and medium annual income with nearly 20 years of experience in sheep farming and high value orientation which might be reflected in medium to high management orientation. The result was supported by the studies conducted by Krishnamurthy (1997) [3].

Table 1: Overall scientific management practices of sheep rearing farmers

n=120			
Sl. No.	Criteria	Frequency	Per cent
1.	Low (Mean-0.425*SD)	18	15.00
2.	Medium (Mean \pm 0.425*SD)	55	45.83
3.	High (Mean + 0.425*SD)	47	39.17

Mean = 74.74, SD = 6.98.

Costs incurred in scientific sheep management practice

Table 2 indicates the cost incurred in sheep rearing it revealed that the total cost of rearing of sheep in small, medium, large flock farmers were Rs. 66,544.38 Rs. 94,520.49 and Rs. 1.12.270.06 per heard per year, respectively. It is observed from the results of the study that the labour was the major item of the cost of rearing, which accounted the labour cost on small farmers was Rs. 45000.00 followed by Rs. 62,000 and Rs. 72, 500 on large farms it might be Sheep rearing is a labour intensive enterprise much care has to be given for proper utilization of labour. (Ramesh 1990) [8], Fodder is the next significant items of variable cost, which constituted Rs. 6728, spend on average fodder feeding for the sheep it might be farmers have to look for those items which are highly nutritious and at the same time cost-effective in order to improve the net returns. Quantum of fodder used was around one quintal per herd per year. This may lead to some sort of misunderstanding that, only this much amount of fodder was fed to animals. But, this is only the purchased fodder which was supplemented after grazing the animals in the open fields. Feed is not usually given to sheep. Only during the littering

period, mother sheep are given little feed and fodder when they are not taken outside for grazing.

Further, the cost of medicine of these animals was about Rs. 2784.00 per herd per year for small farmers followed by Rs. 3350.2 per herd per year medicine cost to the medium sheep farmers and Rs. 4020.55 amount spent by large farmers. Respondents sold the animals in their village itself to the nomadic purchase contractors. Hence, the marketing charges were so less. But, the danger here is, they are much prone to exploitation. Hence, there is a necessity to educate the farmers regarding the marketing of sheep to make them earn better prices and improve their net returns. The overall medicine costs for sheep farmers were Rs. 3384 to the total cost. The large farmers were found more entrepreneurial and took sheep rearing as an enterprise rather than simply a way of life as most small farmers did it. Therefore, they take much care towards better managing their animals to supply healthy animals to purchasers to get better prices. Thus, the medicine cost as much with large farmers. The present study's findings regarding the cost of sheep rearing are similar to the results reported by Ramesh (1990) [8].

Returns from sheep rearing

Table 2 indicates that the gross returns from sheep rearing enterprise were generated from the sale of animals, manure,

wool and other products. On average, the returns realized from these different sources accounted for Rs. 1,79,121.52 per herd per year. The significant receipt was from the sale of grown-up sheep and manure sale also contributed to a sizable extent amount to the return. There was no contribution of meat and wool to the total returns. It was usually a practice with the sheep farmers to take their animals to the agricultural lands of farmers and pen them in their fields on a cost basis. Thus, apart from selling manure produced from their pen, manure is an additional income. The net returns from sheep rearing were around Rs. 39,455.32 per herd per year in the case of small farmers, followed by Rs. 94,737.63 per herd per year and Rs. 129836.37 per herd per year in medium and large sheep farmers. As a supplementary enterprise, sheep rearing provides sizable net returns. (Raman *et al.* 2003) [7]. Labour wages were the major item of the total cost, which eat away nearly half of the returns. Usually, family labours do all these activities in their own. Hence, included imputed value of family labour was included in the analysis. Therefore, net returns would be much higher when these costs are excluded from the study. And benefit cost ration is 1.59 in small farmers followed by 20.00 in medium farmers and 2.16 in large farmers. These findings are in line with the results of, Aslam and Khaushk (2004) [1].

Table 2: Costs and return incurred in sheep rearing management practices

n=120					
Sl. No.	Particulars	Small	Medium	High	Overall
I					
	Fixed cost (Rs.)				
1	Cost of shed	4,180.25	8,678.85	10,321.42	7,726.84
2	Cost of equipments	750	843	965	852.67
3	Interest on fixed capital (8%)	394.42	761.748	902.9136	686.3608
	Subtotal	5,324.67	10,283.60	12,189.33	9,265.87
II					
	Variable cost (Rs.)				
1	Cost of fodder	4,580.00	6,754.00	8,850.00	6,728.00
2	Cost of medicine	2,784.00	3,350.28	4,020.53	3,384.94
3	Feed formulation/ Concentrate feed	900	1147	1,552.00	1,199.67
4	Labours charge	45,000.00	62,000.00	72,500.00	59,833.33
5	Market expenditure	854.12	1,205.65	1,525.26	1,195.01
6	Miscellaneous charge	542.6	754.58	910	735.73
7	Interest on working capital (12%)	6,559.29	9,025.38	10,722.93	8,769.20
	Sub total	61,220.01	84,236.89	100,080.72	81,845.88
	Total cost	66,544.68	94,520.49	112,270.06	91,111.75
III					
	Returns (Rs.)				
1	Sale of sheep	86,000.00	156,258.12	189,821.40	144,026.51
2	Sale of manure (Rs. /q)	20000	33,000.00	52,285.03	35,095.01
	Gross returns	106,000.00	189,258.12	242,106.43	179,121.52
	Net returns	39,455.32	94,737.63	129,836.37	88,009.78
	BC ratio	1.59	2.00	2.16	1.92

Small flock size = <48 Medium flock size = 48-65 High flock size = > 65.

Table 3 and fig. 1 indicates the Marketing channels are routes through which the commodities move from producers to consumers. Length of channels depends on the quantity to be moved, the consumer demand and the degree of concentration of sheep population. Market channels for sheep vary from region to region, flock to flock depending on the size and time to time. Small farmers follow the channel which may be different from that of large farmers. Small farmers may sell the sheep to the village trader. But large farmers may sell the sheep to the wholesalers in the nearby towns. It is also indicated that 71.67 per cent of the farmers sold their sheep to sale producer-village trader-butcher-consumer (Channel II), whereas 54.17 per cent of the sheep farmers sale through producer-wholesaler-butcher-consumer (Channel III), 36.66

per cent of the farmers sale to Producer-village trader-wholesaler-butcher-consumer (Channel IV) and only 29.16 percent of sheep farmers sold their sheep to producer-butcher-consumer (Channel I). The analysis clearly showed that the sheep marketing was highly unorganized. The study on the marketing of sheep in the study area revealed that there was no competition amongst the buyers when retailer, wholesaler or village trader of any competition amongst the buyers compelled to sell the sheep at the price buyer. On the whole, multi marketing channels existed in the district. The primary defaulting system was that the live sheep was not by actual body weight but by visual approximation. These findings are in line with the results of Salander (2007) [9].

Table 3: Explore different marketing channels followed of the sheep rearing farmers

Sl. No.	Different marketing channels	Frequency*	Per cent	n=120
Channel I	Producer-Butcher-Consumer	35	29.16	
Channel II	Producer-Village Trader-Butcher-Consumer	86	71.67	
Channel III	Producer-Wholesaler- Butcher-Consumer	65	54.17	
Channel IV	Producer-Village Trader-Wholesaler-Butcher-Consumer	44	36.66	

*Multiple responses

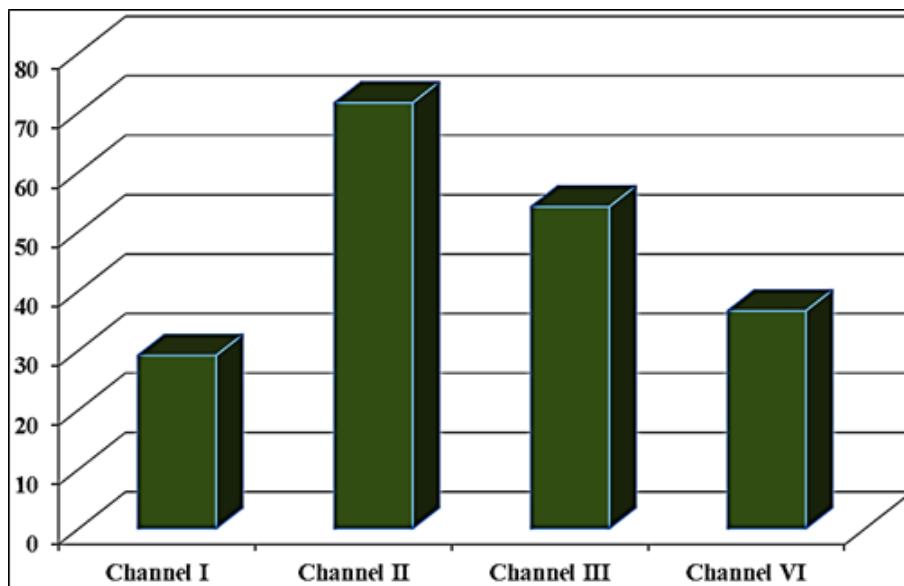


Fig 1: Distribution of sheep rearing farmers according to their marketing channel

Conclusion

Sheep major economically significant livestock activity in study area they kept mainly for immediate cash sources, milk, meat, manure, and saving or risk distribution. Cost and returns and marketing channel of sheep was revealed to be profitable and worth venturing into as a source of income. The livestock marketing structure of Raichur follows a four-tier system. These tiers are local farmers and rural traders or assemble local markets, secondary markets, and terminal markets. Small ruminant productions are highly influenced by feed shortage, disease and parasites, water shortage and market fluctuation. It indicates the need for education programmes to create awareness about sheep farming as an enterprise and develop capabilities to the farmers through training camps and exposure visits. Good extension services and arranging participatory interaction with proper justification will benefit them socially, culturally and economically. From the present investigation, it has been concluded that most people are taking the field crops. To encourage the farmers towards subsidiary occupation by providing subsidies and free distribution of sheep, arranging community grazing and strengthening veterinary services and inputs.

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