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Constraints perceived by sheep rearers in Vijayanagara and Ballari districts of Karnataka

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Abstract

Sheep rearing is an integral component of rural livelihoods in India, particularly in semi-arid regions where agriculture is constrained. The present study was undertaken to identify the constraints perceived by sheep farmers in Vijayanagara and Ballari districts of Karnataka, India. Sheep rearing under three systems with a sample size of 40 intensive, 40 semi-intensive, and 40 extensive system farms with particular constraints were recorded by using a structured interview schedule. Data collection was involved with use of participatory observation technique and focused group discussions. Data from the schedules was compiled and analyzed using the Garrett's ranking technique. Major constraints perceived by sheep farmers were fodder scarcity, limited veterinary access, high input costs, and market exploitation by middlemen. To overcome these constraints suitable extension measures should be undertaken in order to improve the farmer's income.

Keywords: Sheep rearing, constraints, Vijayanagara and Ballari districts

Introduction

Sheep are a significant livestock species in India because they boost farmer's incomes, particularly in rural areas. Sheep provide assistance and support to farmers in rainfed areas when seasonal rainfall fails, resulting in crop failure. Sheep are arguably the best small ruminants to use the sparse vegetation available in dry land areas through rangeland management and reseeded pastures thanks to their faster growth rate, shorter production cycles, early sexual maturity, high-quality skin, low lambing intervals, good adaptability, ease of management, low initial capital investment, and steady returns when compared to large ruminants. (Adegbeye *et al.*, 2020) ^[1].

The farming systems in developing nations like India can be divided into three categories: extensive, semi-intensive, and intensive (Rangamma, 2022) ^[8], (Karthik *et al.*, 2021) ^[5]. The availability of feed and fodder is a major issue for sheep rearing because grazing resources are being depleted more quickly (Kochewad *et al.*, 2018) ^[6]. Even though there are several initiatives to develop sheep in various states across the nation, raising sheep is still a backward and nomadic practice, primarily affecting the poor and landless. Shepherds continue to move their herds or flocks across large areas within or even in neighboring states due to the

lack of suitable grazing lands in the majority of states. Despite the fact that raising sheep is a significant husbandry practice in many regions, farmers continue to face challenges with management, feeding, marketing, and reproductive issues (Akila, 2014) ^[2]. The objective of the study was to identify the constraints being perceived by the respondents in Vijayanagara and Ballari districts of Karnataka.

Materials and Methods

The study was conducted in Vijayanagara and Ballari districts of Karnataka, India. From each district 60 sheep farms with 20 intensive, 20 semi-intensive, and 20 extensive rearing were selected for the study. Thus forming a total sample size of 120 sheep farmers with inclusion of 40 intensive, 40 semi-intensive and 40 extensive rearing farmers. Constraints were listed under different heads interview schedule and recorded based on priority. additionally, data collection involved the use of participatory observation technique and focused group discussions.

The respondents in study area were asked to rank each of the constraint relevant to them according to the degree of importance as perceived by them. As the respondents were

not ranked uniformly the Garrett (1981) method of combining incomplete order of merit ratings was used to rank the constraints.

The formula for per cent position suggested by Garrett (1981) was-

$$\text{Per cent position} = 100 (\text{Rij} - 0.50) / \text{Nj}$$

Where Rij is the Rank given for the ith factor by the jth individual, Nj is the Number of factor ranked by the individual. The per cent positions thus obtained were converted into scores by referring the table given by Garrett. Then for each problem the scores of individual respondents were added and divided by the number of respondents. The mean score for all the problems were arranged and thus rank were assigned to the problems based on mean values.

Table 1: Distribution of respondents according to socio-economic constraints (N=120)

Sl. No	Socio economic constraints	Intensive system		Semi intensive		Extensive	
		Mean score	Rank	Mean score	Rank	Mean score	Rank
1	Predator/stray dog attacks	18.00	XI	18.25	XI	41.43	IX
2	Thefts	28.00	X	27.93	X	52.80	V
3	Seasonal demand for mutton	46.75	VII	50.03	VII	55.75	IV
4	High-cost equipment and infrastructure	72.33	I	54.75	V	34.58	XI
5	High-cost feed supplements	72.28	II	70.68	I	51.18	VI
6	High cost of labour	69.10	III	50.68	VI	36.38	X
7	High-cost treatment	41.50	VIII	43.88	VIII	45.33	VIII
8	Difficulty in getting loan facilities	52.40	VI	68.63	II	68.35	I
9	Non availability of subsidies	56.10	V	64.13	III	57.20	III
10	Timely non availability of credit facilities	56.30	IV	60.70	IV	59.55	II
11	Low productivity	38.25	IX	41.38	IX	48.48	VII

Results and Discussion

Constraints were categorized in to three groups namely socio economic constraints, managemental constraints and technological constraints. Results pertaining to the socio-economic constraints are presented in table 1.

The results related to socio economic constraints indicated that in intensive system of rearing, high cost equipment and infrastructure was ranked first with mean score of 72.33 followed by high cost of feed supplements (72.28), high cost labour (69.10), unavailability of timely credit facilities (56.30), non-availability of subsidies (56.10), difficulty in getting loan facilities (52.40), seasonal demand for mutton (46.75), high cost of treatment (41.50), low productivity (38.25), thefts and predator/ stray dog attacks ranked last with a mean score of 28.00 and 18.00 respectively. Among semi intensive system, high cost of feed supplements was ranked first with mean score of 70.68, followed by difficult in getting loan facilities (68.63), non-availability of subsidies (64.13), unavailability of timely credit facilities (60.70), high cost of equipment and infrastructure (54.75), high cost of labour (50.68), seasonal demand for mutton (50.03), high cost of treatment (43.88), low productivity (41.38), thefts and predator/ stray dog attacks ranked last with a mean score 27.00 and 18.20 respectively. Among extensive system, difficult in getting loan facilities ranked first with a mean score of 68.65, followed by timely unavailability of timely credit facilities (59.55), non-availability of subsidies (57.20), seasonal demand for mutton (55.75), thefts (52.80) high cost of feed supplements (51.18), low productivity (48.48), high cost of treatment (45.33), predator/ stray dog attacks (41.43), high cost of labour and high cost of equipment and infrastructure was ranked last with mean score of 36.38 and 34.58 respectively.

Farmers depend on modern equipments and well built shed to manage their flocks efficiently. These are capital intensive to purchase, install and even maintenance. As the animals are maintained on stall fed, feed must be purchased and sometimes the cost of the feed varies due to market demand. High quality, nutrient rich feed results in higher

price. This might be the reason for foremost constraints in intensive system. Compare to other two systems more labours and long working hours required in intensive system. In semi-intensive system, due to price fluctuation feed cost becomes major constraint for the farmers. These results were in line with Choudhary *et al.* (2018)^[4], Shah *et al.* (2018)^[11] where lack of credit facilities, high costs of feed and fodder were major constraints.

Results pertaining to the managemental constraints are presented in table 2. In intensive system lack of exotic breeds ranked first with mean score of 79.16, followed by lack of veterinary care (69.00), non availability of medicines (64.00), depletion of grazing land (61.40), non availability of roughages (57.60), lack of breedable rams (52.50), high susceptibility to diseases (49.00), non availability of vaccines (47.00), inadequate supply of drinking water (31.00), transportation problem (21.00) and less conception rate (18.33). In semi- intensive system, lack of veterinary care (77.00) was then major constraint followed by depletion of grazing land (67.58), lack of exotic breeds (67.50), lack of breedable rams (64.17), non availability of medicines (53.00), non availability of roughages (51.43), non availability of vaccines (50.00), high susceptibility to diseases (34.00), inadequate supply of drinking water (31.00) and less conception rate (18.34). In extensive system, transportation problem was ranked first with mean score of 84.50, followed by lack of breedable rams (68.33), depletion of grazing land (59.98), high susceptibility to diseases (53.00), non availability of roughages (52.38), non availability of vaccines (48.00), lack of veterinary care (45.50), Less conception rate (41.67), lack of exotic breeds (40.00), inadequate supply of drinking water (37.65) and non availability of medicines (19.00). These results might be due to exotic breeds are usually costly and due to its poor adaptability to local conditions these animals were maintained by rich farmers only so availability of these exotic breeds are limited to few making it major constraints in intensive rearing system. Intensive and semi-intensive farms located away from veterinary services which

minimises the availability of veterinary care to the farmers in time especially in emergencies resulting as the major constraint. Transportation problem was major constraint for extensive farmers might be because of high cost transport charges and most of them were not possessed any vehicles. These results were in line with Azimi *et al.* (2022),^[3]

Kumar *et al.* (2021)^[7], Seetha *et al.* (2021)^[10] and Reddy *et al.* (2018)^[9] where depletion of grazing area was major constraint in their study and Choudhary *et al.* (2018)^[4], Thilakar and Krishnaraj. (2007)^[12] where depletion of grazing area, lack of veterinary care were the major constraints.

Table 2: Distribution of respondents according to managemental constraints (N=120)

Sl. No	Managemental constraints	Intensive system		Semi intensive		Extensive	
		Mean score	Rank	Mean score	Rank	Mean score	Rank
1	Depletion of grazing land	61.40	IV	67.58	II	59.98	III
2	Non availability of roughages	57.60	V	51.43	VI	52.38	V
3	Inadequate supply of drinking water	31.00	IX	31.00	X	37.65	X
4	Lack of breedable rams	52.50	VI	64.17	IV	68.33	II
5	Less conception rate	18.33	XI	18.34	XI	41.67	VIII
6	lack of exotic breeds	79.16	I	67.50	III	40.00	IX
7	Lack of veterinary care	69.00	II	77.00	I	45.50	VII
8	Non availability of medicines	64.00	III	53.00	V	19.00	XI
9	Non availability of vaccines	47.00	VIII	50.00	VII	48.00	VI
10	High susceptibility to diseases	49.00	VII	36.00	VIII	53.00	IV
11	Transportation problem	21.00	X	34.00	IX	84.50	I

Results pertaining to the technological constraints are presented in table 3. In intensive system lack of technical guidance ranked first with mean score of 61.88 followed by lack of insurance awareness (59.38), lack of training facilities (55.63) and lack of scientific knowledge (23.13). Among semi-intensive system, lack of training facilities ranked first (70.63) followed by lack of technical guidance (64.38), lack of scientific knowledge (45.00), lack of insurance awareness was ranked last with a mean score of 20.00. Whereas in extensive system, lack of insurance awareness ranked first (58.44), lack of training facilities ranked second (55.63), lack of technical guidance ranked third (46.88) whereas lack of scientific knowledge ranked

last (40.63). Lack of technical guidance might be due to limited extension services, cost barriers and some innovations have not reached the farmers effectively. Lack of insurance awareness was due to limited insurance or financial literacy, lack of awareness campaigns. Even though trainings were held regularly, farmer participation is negligible due to their busy work schedule, limited interest, low literacy, limited awareness channels, and rural people face challenges to reach urban areas for training. These results were in line with Thilakar and Krishnaraj. (2007)^[12] where lack of technical guidance, lack of training and lack of knowledge in scientific practices were major technological constraints.

Table 3: Distribution of respondents according to technological constraints (N=120)

Sl. No	Technological constraints	Intensive system		Semi intensive		Extensive	
		Mean score	Rank	Mean score	Rank	Mean score	Rank
1	Lack of scientific knowledge	23.13	IV	45.00	III	40.63	IV
2	Lack of technical guidance	61.88	I	64.38	II	46.88	III
3	Lack of training facilities	55.63	III	70.63	I	55.63	II
4	Lack of insurance awareness	59.38	II	20.00	IV	58.44	I

Conclusion

The findings of the study concluded that the foremost constraint perceived by the sheep farmers were the high cost of feed and labour, poor access to institutional credit and subsidies, seasonal fluctuations in mutton demand were the major socio-economic constraints. Depletion of grazing land, lack of improved breeds and quality rams, transportation challenges, especially for extensive farmers were major managemental constraints. Limited awareness of scientific management practices, poor participation in training and extension programs, lack of insurance coverage for sheep were major technological constraints.

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