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Constraint analysis in sheep farming in Prakasam District of Andhra Pradesh with special reference to KVK, Darsi

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Abstract

Sheep farming is a vital livelihood activity in semi-arid regions like Prakasam district, Andhra Pradesh, especially where crop production is less dependable. Despite its significance, the sector faces numerous systemic and situational constraints. This study aimed to identify and analyze the constraints affecting sheep farmers in the mandals of Darsi, Podili, and Addanki, with Krishi Vigyan Kendra (KVK), Darsi as the focal extension hub. A total of 120 sheep farmers were selected using a simple random sampling method across the three mandals. Data were collected using a structured, pre-tested interview schedule and categorized under six domains: Managerial, technological, socio-economic, marketing, infrastructural, and situational. The results revealed that managerial constraints ranked highest, particularly the non-availability of grazing land (92.5%) and inadequate veterinary services (88.3%). Marketing challenges such as non-remunerative pricing (88.3%) and exploitation by middlemen (75%) also surfaced as key concerns. The study highlights the need for integrated support mechanisms, training, and policy interventions to strengthen the sustainability and profitability of sheep farming in the region.

Keywords: KVK, Sheep farming, constraints, Prakasam, Darsi, animal husbandry, rural livelihoods

Introduction

Sheep rearing forms an integral component of the rural economy in India, particularly in arid and semi-arid regions where crop farming is unreliable due to erratic rainfall and soil constraints. With its multipurpose utility providing meat, wool, manure, and supplementary income sheep farming sustains millions of marginal and small farmers.

Prakasam district, located in the southern part of Andhra Pradesh, is predominantly rainfed and houses a large population of small ruminants. The region faces recurring droughts, poor infrastructure, and limited market linkages, which collectively affect the productivity and viability of livestock-based livelihoods. Among the key institutions working to promote sustainable animal husbandry in the district is the Krishi Vigyan Kendra (KVK), Darsi, which supports farmers through training, demonstrations, and technical advisory services.

Despite these efforts, sheep farming continues to face a variety of limitations ranging from poor grazing access to inadequate healthcare, lack of training, and market bottlenecks. The current study was undertaken to conduct a systematic constraint analysis of sheep farmers in the mandals of Darsi, Podili, and Addanki, aiming to identify critical problem areas and suggest potential avenues for intervention.

2. Methodology

2.1 Study Area and Sampling

The study was conducted in the three major sheep-rearing mandals of Darsi, Podili, and Addanki under the operational jurisdiction of KVK, Darsi in Prakasam district. Four villages from each mandal were randomly selected. From each village, ten sheep farmers were randomly chosen using a simple random sampling technique, leading to a total sample size of 120 farmers.

2.2 Data Collection

A well-structured and pre-tested interview schedule was used to collect data. The instrument captured information on demographic details and six categories of constraints: Managerial, Technological, Socio-economic, Marketing, Infrastructural, and Situational. Each constraint was rated by respondents on a 4-point Likert scale: 4-Most Serious Constraint, 3-Serious Constraint, 2-Less Serious Constraint, 1-Not a Constraint. The responses were analyzed using mean scores and ranked accordingly.

3. Results and Discussion

This section presents a comprehensive analysis of the constraints faced by sheep farmers in the selected mandals. The constraints were categorized into six broad groups for detailed understanding: managerial, technological, socio-economic, marketing, infrastructural, and situational.

3.1 Managerial Constraints

Table 1: Managerial Constraints

Constraint	% Respondents	Rank
Non-availability of grazing land	92.5%	I
Inadequate veterinary aid	88.3%	II
High susceptibility to disease	84.1%	III
Inadequate drinking water supply	80.0%	IV
Lack of roughage	68.3%	V

Managerial issues emerged as the most critical constraint category in the region

- **Non-availability of grazing land throughout the year (92.5%):** This was perceived as the most severe issue. In a rainfed region like Prakasam, shrinking common lands and seasonal dry spells reduce forage availability, forcing farmers to purchase fodder or migrate their flocks seasonally. This aligns with findings from Tamil Nadu (Thilakar & Krishnaraj, 2007) ^[1], where 95% of respondents faced the same challenge.
- **Inadequate veterinary services at farmer's doorstep (88.3%):** The lack of mobile veterinary units and inaccessible veterinary hospitals discourages timely treatment. Farmers reported losing lambs and breeding stock due to preventable illnesses.
- **High susceptibility of sheep to diseases (84.1%):** Inadequate vaccination and irregular deworming lead to frequent disease outbreaks. Farmers also lacked training in disease recognition and first-aid care.
- **Inadequate supply of drinking water (80.0%):** Especially during summer, water scarcity disrupts feeding and weight gain in sheep. Farmers often reported walking long distances for water, which affected animal health.
- **Non-availability of roughages (68.3%):** Lack of crop residues and poor silage-making practices contribute to this issue.

These constraints point to a lack of integration between livestock extension and natural resource management in the area.

3.2 Technological Constraints

- Lack of training in scientific practices (86.6%) and lack of technical guidance (81.3%) emerged as major hurdles. While KVK Darsi conducts periodic trainings, the coverage is limited, and many farmers are unaware of the schedule or lack time to attend due to grazing responsibilities.
- Farmers had low knowledge about improved breeds, feed supplements, vaccination schedules, and parasite control. Many still followed traditional practices, such as open-air lambing, free-grazing without supplementation, and delayed treatment, contributing to lower productivity.
- The adoption of new technologies such as mineral mixture usage, silage preparation, breed improvement through AI or selective rams, and parasite control remained very low.
- This calls for tailored training programs using participatory learning methods like farmer field schools (FFS) or on-farm demonstrations with follow-up handholding.

Table 2: Technological Constraints

Constraint	% Respondents	Rank
Lack of training in scientific practices	86.6%	I
Lack of technical guidance	81.3%	II
Poor knowledge of breeding and feeding	65.0%	III

3.3 Socio-economic constraints

Table 3: Socio-economic constraints

Constraint	% Respondents	Rank
High veterinary costs	91.6%	I
Lack of loan facilities	70.0%	II
Seasonal demand for mutton	65.8%	III
Predators/theft	59.1%	IV
High cost of parent stock	67.5%	V

- High cost of veterinary treatment (91.6%) was a major financial burden. Since most treatment is out-of-pocket, farmers often delay or avoid veterinary intervention, worsening health outcomes.
- Inadequate loan facilities (70%) and timely non-availability of credit were reported as key challenges, especially during lambing season or emergencies.
- High cost of parent stock (67.5%) and high cost of feed (66.6%) limit the ability of marginal farmers to expand their flock or improve management. Feed cost alone accounted for nearly 60% of total production cost.
- Other socio-economic constraints like predators (59.1%), seasonal demand fluctuations, and animal thefts reflect the vulnerability and lack of protective infrastructure such as fencing or insurance.

These findings highlight the urgent need for low-interest credit schemes and livestock insurance coverage to buffer economic risks.

3.4 Marketing Constraints

Table 4: Marketing Constraints

Constraint	% Respondents	Rank
Non-remunerative prices	88.3%	I
Lack of organized market	79.1%	II
Middlemen exploitation	75.0%	III
Distance to market	72.5%	IV

- Non-remunerative prices (88.3%) were the top constraint. Most farmers sell to local traders or middlemen at the farm gate, where prices are not only lower but also fluctuate widely due to lack of price information.
- Lack of organized marketing structures (79.1%) such as sheep cooperatives or producer groups prevents collective bargaining. Attempts to form such groups had failed in the past due to lack of sustained support.
- Middlemen exploitation (75%) was reported, especially during peak seasons like festivals, where farmers are pressured to sell quickly due to lack of storage or market access.
- Distance to markets (72.5%) adds to transport costs and leads to distress selling, especially in Podili and interior villages of Darsi.

3.5 Infrastructural Constraints

Table 5: Infrastructural Constraints

Constraint	% Respondents	Rank
Lack of animal transport	81.6%	I
Lack of feed troughs or shelters	67.5%	II
Inadequate extension staff	60.8%	III

- Lack of transport facilities (81.6%) for animals during emergencies or for accessing veterinary care hinders timely action, especially in Addanki where public transport is poor.
- Lack of feed troughs/waterers and housing structures (67.5%) leads to inefficient feeding and disease spread. Farmers cited difficulty in accessing materials or skilled labour for sheep sheds.
- Shortage of trained extension personnel (60.8%) further aggravates the situation. Most respondents said they rarely interacted with a veterinary officer or livestock assistant. Improving rural infrastructure like roads, veterinary sub-centres, and mobile units can significantly reduce these burdens.

3.6 Situational Constraints

Table 6: Situational Constraints

Constraint	% Respondents	Rank
Drought	85.8%	I
Disease outbreak	80.0%	II
Floods	12.5%	III

- Drought (85.8%) and disease outbreaks (80%) were cited as serious, recurring issues. Seasonal droughts lead to fodder scarcity and animal mortality, while contagious diseases spread rapidly due to communal grazing.
- Flooding (12.5%) was reported only in a few low-lying pockets and was not a major concern in most of the study area. These climatic challenges demand proactive disaster management planning, drought fodder banks, and livestock health surveillance systems.

4. Conclusion

The study revealed that sheep farmers in Prakasam district face complex, interlinked constraints that limit productivity and profitability. Managerial and marketing barriers emerged as the most critical categories, highlighting the need

for systemic and institutional interventions. Immediate attention should be given to:-

Development of community-managed grazing lands and fodder banks.

- Deployment of mobile veterinary services and doorstep healthcare.
- Establishment of organized sheep marketing cooperatives. Access to credit, insurance, and subsidy schemes.
- Capacity-building through KVK-led farmer field schools and peer learning platforms.

Conflict of Interest

Not available

Financial Support

Not available

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