

RESEARCH PAPER

A comparative analysis of constraints faced by NARI Suwarna and local sheep rearing farmers in Karnataka

*RAHUL MOOGANUR¹, B. R. JAMAKHANDI¹ AND G. K. ANILKUMAR²

¹Department of Agricultural Economics, ²Department of Animal Science, College of Agriculture, Dharwad
University of Agricultural Sciences, Dharwad - 580 005, India

*E-mail: rahulmooganur@gmail.com

(Received: November, 2023 ; Accepted: May, 2024)

DOI: 10.61475/JFS.2024.v37i3.10

Abstract: The present study was conducted to identify the constraints faced by NARI Suwarna and local sheep rearing farmers in Karnataka. The study was conducted during the year 2022-23. For collection of primary data, exponential non-discriminative snow ball sampling method was used for NARI Suwarna sheep farmers and random sampling method was used for local sheep farmers. In the first stage, major four districts (Chitradurga, Tumkur, Belgaum, Bagalkot) were selected based on highest population of sheep according to 20th livestock census, 2019. In the second stage, 15 local sheep farmers were selected randomly from each district and 60 NARI Suwarna sheep farmers were selected in Karnataka by snow ball sampling technique. Thus, the total sample size for the study was 120. The data was analysed by using the Garrett's ranking technique. Results indicated that the major constraints faced by NARI Suwarna sheep farmers were the high initial cost for construction of shed and animals which ranked first with mean Garrett's score of 61.35, followed by high-risk involvement in rearing of sheep (55.83), difficulty in getting pure breed of sheep (54.13), high cost for feed concentrations (54.03) and lamb mortality (50.00). Whereas in case of local sheep farming, poor community grazing lands was the major constraint with mean Garrett's score of 61.23 because of the decline in area under community grazing lands, followed by high disease incidence in sheep (61.03), lamb mortality (57.50) and limited awareness towards insurance for sheep (50.03) were the other constraints.

Key words: Constraints, Garrett's ranking technique, NARI Suwarna, Snow ball sampling

Introduction

In India, agriculture is a significant occupation and source of revenue that supports the livelihoods of more than 58 per cent of the population. Indian agriculture has been expanding for a long time, supported by various allied activities like sheep, goat, cattle and poultry farming *etc.* As stated by the 20th livestock census, 2019 India has the highest population of livestock in the world (535.78 million) and is one of the key sources of income and employment for rural residents. Agriculture and livestock being interdependent, with agriculture providing crop waste, a primary source of feed for livestock, while livestock provides manure and draught power to agriculture. The agricultural production and livestock rearing work together to fully utilize the potential of the products from the farm and reduce any wastage of it. Sheep rearing plays a major role in the Indian economy in general and the sustainable livelihood of poor people in particular due to the inherent risk involved in crop farming because of the uncertainty of rainfall and the occurrence of recurrent droughts, specifically for those residing in rainfed agro-ecosystem regions. Sheep are particularly crucial in rural regions where they are intimately related to the poor. Even in rural places where it is tough to raise other animals, sheep are an integral component of the local economy. The majority of the sheep's fodder needs are met by using low-grade feeds that are typically left over from when other livestock species have used them. Sheep farming is a provision of supplemental and complementary enterprise for the use of surplus farm resources, to enhance the farm's productivity and for boosting farm income. It significantly impacts socio-economic growth and is crucial to the farming practices used in rain-fed and environmentally vulnerable regions (Siddaraju, 2018).

The majority of sheep breeds typically produce a single lamb with three lambing's every two years. One method to boost the income from sheep production systems is to increase the number of lambs per lambing. The Garole breed is known to produce multiple births due to the presence of the "Fec B gene" (Nimbkar *et al.*, 2009). The "Fec B gene" from the Garole breed of the Sundarban, West Bengal, was introduced to the Lonand strain of the Deccani sheep to create the NARI Suwarna sheep.

The objective of the study was to identify the constraints faced in sheep farming in Karnataka

Material and methods

For collection of primary data, exponential non-discriminative snow ball sampling method was employed for NARI Suwarna sheep farmers and multistage purposive random sampling method for local sheep farmers. For local sheep farmers, in the first stage of data collection, major 4 districts (Chitradurga, Tumkur, Belgaum and Bagalkot) were selected based on the highest population of sheep according to 20th livestock census, 2019. In the second stage, 15 local sheep farmers were selected randomly from each district. NARI Suwarna sheep farmers of about 60 were selected in Karnataka using snow ball sampling technique. Thus, the total sample size for the study was 120 sample respondents.

The study was conducted during the year 2022-23. In the study area the constraints were identified based on the opinion survey from sample respondents. Garrett's ranking technique was used to evaluate the problems encountered by respondents of sheep rearers. In this method, the farmers were asked to rank the given constraint according to the magnitude of the problem. The orders of merit given by respondents were converted into ranks by using the following formula,

Table 1. Constraints faced in NARI Suwarna sheep production farms

| Constraints | Mean Garrett's score | Rank |
|--|-------------------------|------|
| High initial investment for construction of shed and animals | 61.35 | I |
| High risk involvement in rearing of sheep | 55.83 | II |
| Difficulty in getting pure breed of sheep | 54.13 | III |
| High cost for feed concentrations | 54.03 | IV |
| Lamb mortality | 50.00 | V |
| Limited awareness towards insurance for sheep | 46.02 | VI |
| Difficulty in obtaining finance for rearing sheep | 45.10 | VII |
| High disease incidence in sheep farms | 42.27 | VIII |
| Distant veterinary facilities for sheep check-up | 41.30 | IX |

Percentage position = $100 (R_{ij} - 0.5) \div N_j$

Where,

R_{ij} = Rank given for i^{th} item by j^{th} individual

N_j = Number of items ranked by j^{th} individual

By referring to the table given by the Garrett and Woodworth (1969), percentage position of each rank thus obtained was converted into scores. Then for each factor, the scores of individual respondents were added together and divided by total number of respondents for whom the scores were added. These mean scores of all the factors were arranged in the order of their ranks and inferences were drawn out of it.

Results and discussion

Constraints in NARI Suwarna sheep production farms

In NARI Suwarna sheep rearing, the high initial investment for construction of shed and animals (Rank I) was the major obstacle with a mean Garrett score of 61.35 because the NARI Suwarna sheep is mainly reared under the intensive and semi-intensive method hence it needs more maintenance in the form of shed and feed and fodder. The high-risk involvement in rearing of sheep (Rank II) was the next major constraint with a Mean Garrett score of 55.83. This is mainly because NARI Suwarna sheep is a new improved breed of sheep so any unscientific method of rearing will lead to change in the genotype of this breed and will lead to disturbance in its twinning capacity so, much care is needed here. Non-availability of pure breed of sheep (Rank III, Mean Garrett score of 54.13), high cost for feed concentrations (Rank IV, Mean score of 54.03), Lamb mortality (Rank V, Mean score of 50.00), limited awareness towards insurance for sheep (Rank VI, Mean score of 46.02), difficulty in obtaining finance for rearing of sheep (Rank VII, Mean score of 45.10), high disease incidence in sheep (Rank VIII, Mean score of 42.27) and distant veterinary facilities for sheep check-up (Rank IX, Mean score of 41.30) were identified as the other constraints faced by NARI Suwarna sheep rearing farmers (Table 1).

References

Nimbkar C, Ghalsasi P M, Nimbkar BV, Ghalsasi P, Gupta V S, Pardeshi V C, Maddox J F, Van Der Werf J H J, Gray G D and Walkden-Brown S W, 2009. Biological and economic consequences of introgression of the Fec B (fecundity booroola) gene into Deccani sheep. In: Use of the Fec B (fecundity booroola) gene in sheep breeding programs. ACIAR Proceedings No. 133, pp. 90–99.

Table 2. Constraints faced in Local sheep production farms

| Constraints | Mean Garrett's score | Rank |
|---|-------------------------|------|
| Poor community grazing lands for sheep | 61.23 | I |
| High disease incidence in sheep | 61.03 | II |
| Lamb mortality | 57.50 | III |
| Limited awareness towards insurance for sheep | 50.03 | IV |
| Distant veterinary facilities for sheep check-up | 49.90 | V |
| Fear of attack by wild animals on sheep and sheep rearers | 48.48 | VI |
| Shortage of fodder during drought period | 46.75 | VII |
| Difficulty in obtaining finance for sheep rearing | 41.60 | VIII |

Constraints in local sheep production farms

Poor community grazing lands for sheep (Rank I), which had a mean Garrett score of 61.23, was the main limitation experienced by local sheep ranchers. This is due to the area under the grazing is gradually declining. The next significant limitation was listed as the high illness incidence in sheep (Rank II), with a mean Garrett score of 61.03. Lamb mortality (Rank III), limited awareness towards insurance for sheep (Rank IV, Mean score of 50.03), followed by distant veterinary facilities for sheep check-up (Rank V). This was due to sheep rearers staying away from their villages and living in their own fields which posed a major hinderance from easy access to veterinary facilities. Fear of attack by wild animals on sheep and sheep farmers (Rank VI) when they take sheep for grazing, acute fodder shortage during drought period (Rank VII) and difficulty in obtaining finance for sheep rearing (Rank VIII) were identified as the other constraints in local sheep rearing (Table 2).

Conclusion

The high initial investment for construction of shed and animals (Garrett's score=61.35, Rank-I) was the major constraint that hinders the sheep rearers to go for intensive method of NARI Suwarna sheep rearing. Hence, it was opined that support from the government either in the form of credit or subsidy would be helpful. Availability of pure breed was the prime need for rearers of NARI Suwarna sheep breed. Hence, it could be suggested that NARI Institute may increase the number of pure breed and distribute to sheep rearers. The majority of local sheep farmers practice an extensive method of raising their sheep, a lack of grazing land was their main worry. The mapping, demarcation, and implementation of policies to maintain the grazing land in the state are urgently required. So that it will help farmers on how to transition from an extensive system of sheep rearing to an intensive one for producing commercial meat.

Siddaraju, 2018, Economics of sheep and goat rearing in Mandya and Mysuru districts of Karnataka. M.Sc. (*Agri.*) Thesis, University of Agricultural Sciences, Bangalore, Karnataka, India.

Garrett H E and Woodworth RS 1969. Statistics in psychology and education. Vakils, Feffer and Simons Pvt. Ltd., Bombay. p.329