

# Perceived Constraints in Goat Rearing: Insights from the Goat Banking Attempt in Maharashtra

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## ABSTRACT

A survey was conducted in 2022 to identify the constraints perceived by the beneficiaries of the Goat Bank of Karkheda, with randomly selected 300 beneficiaries out of 590 beneficiaries in all; from five districts of Maharashtra state under the jurisdiction of the goat bank. The data were collected by direct and personal interviews using a pre-tested, semi-structured interview schedule. The Garrett ranking technique was used to determine the most significant factor (constraint) that was perceived to influence the respondents. The study identified various constraints perceived to be severe by the goat bank beneficiaries, including shrinkage of grazing land (Mean score, *i.e.*, MS 60.70), distant location of veterinary hospital (MS 65.57), poor financial resources (MS 55.40), delayed puberty in goats (MS 61.81), lesser remunerative prices offered by middlemen (MS 67.13), poor knowledge on scientific goat production (MS 64.44), and mortality in goats (MS 56.58) under the respective categories of constraints, *viz.* constraints regarding socio-economic status, health management, feeding management, breeding management, marketing management, care and management, and the general constraints.

**Keywords:** Garrett ranking, Goat Bank, Mean Score, Perceived constraints

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## INTRODUCTION

India is recognised as one of the world's largest sheep and goat meat exporters. During the 2020-21 fiscal year, the country exported 8,695.97 MT of sheep and goat meat to the world, valued Rs. 447.58 crores (APEDA, 2023). The changes in livestock rearing purpose and functions necessitated by socio-economic alterations, increasing urbanisation, mechanisation in agriculture, changes in crop production, and land utilisation patterns due to increasing human population and diversification in land use have increased the relevance of the meat sector in India. Sustained livestock production requires innovative interventions and practical strategies under varied circumstances. Innovative interventions, such as start-ups, not only generate new employment opportunities and increase overall employment; but also have a ripple effect on the socio-economic structure of the demographics in which they operate (Anand and Raj, 2019). Initiatives should be encouraged to create social entrepreneurship clusters to support value chains where farmers' welfare is considered necessary. On similar lines, the Goat Bank of Karkheda, an Agri Producer Company Limited (Reg. No. MH35E0005027) was established in July, 2018 located at village Sangavi (Mohadi), dist. Akola (Headquarter), in Vidarbha region of the Maharashtra state aiming to bring a socio-economic revolution for farmers.

The goat bank claims to be established with the objectives to ensure compounding benefits in goat rearing will reach up to the farmers and women beneficiaries, make every woman beneficiary a banker/investor, and increase production of quality goats for local and regional markets as a perspective plan (Agrowon, 2022). Considering the chances of constraints perceived in any livestock business, an attempt was made to

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identify and understand the constraints for this participatory innovative extension livelihood attempt.

## MATERIALS AND METHODS

The survey was conducted in five talukas of five districts (one taluka from each district) under the jurisdiction of the goat bank in Maharashtra state, where the bank has distributed goat/s on loan to the beneficiaries. Five talukas *viz.*, Javhar, Akola, Nagpur, Chalisgaon, and Kapadane, respectively, from the Palghar, Akola, Nagpur, Jalgaon, and Dhule districts were considered for the study. A person who received the loan in the form of a goat, duly signed the agreement as per norms and policy of the goat bank, and onwards completed at least one year of goat rearing; was considered the beneficiary/respondent for the research study.

A total of 300 beneficiaries out of 590 beneficiaries in all; from the five districts of Maharashtra state under the jurisdiction of the goat bank, who received one goat each, were selected randomly and considered as the respondent for the study. Sixty respondents from each taluka under the jurisdiction of the Goat Bank of Karkheda were selected randomly for sampling. Multi-stage sampling was followed for the study. Data were collected by direct and personal interviews using a pre-tested semi-structured interview schedule. The Garrett ranking technique (Garrette and Woodworth, 1969) was used to determine the most significant factor (constraint) that was perceived to influence the respondent. The technique was used to ascertain the relative importance or priority of different constraints that may exist in a project. The method involves assigning a rank or weight to each constraint based on its perceived significance. Once the individual ranking was collected and secured, the responses were compiled and aggregated to calculate an overall ranking for each constraint.

The order of merit, assigned by the respondents to the constraints was converted into ranks by using the formula –

$$\frac{\text{Percent Position}}{N_j} = 100 (R_{ij} - 0.5)$$

Where,  $R_{ij}$  = Rank given for  $i$ th factor by  $j$ th individual  
 $N_j$  = Number of factors ranked by the  $j$ th individual

The percent position calculated was converted into scores with the help of Garrett's table. Then, for each factor, the scores of every respondent were summed up and the total value of scores and the mean values of scores were estimated. The mean score for all the factors was arranged in the order of merit. The factor having the highest mean value was the most important factor. Garrett's ranking technique provides a structured approach to prioritise constraints and helps in focusing on the most critical aspects of a project.

## RESULTS AND DISCUSSION

The constraints perceived by the goat bank beneficiaries related to goat rearing were assessed, classified, and are presented in Table 1.

The figures in Table 1 indicate that shrinking of grazing land was identified and rated as the most severe socio-economic constraint (rank I), followed by the poor credit and loan facilities (rank II). Lowered level of technical education in understanding scientific goat rearing was considered a comparatively less severe constraint (rank III). Shrinking of grazing land might be considered the most severe constraint by the goat bank beneficiaries because of the lesser availability of land for grazing. So, the pastoralists and farmers might have to travel/ migrate farther to locate the grazing land. This might raise the cost of rearing goats, require more effort, and limit the time for other forms of income-generating activity. The results revealed in the

present work regarding the socio-economic constraints are in line with those of Reddy *et al.* (2023), Gill *et al.* (2022), Seetha *et al.* (2021).

The results pertaining to the health-related constraints presented in Table 1 reveal that the distant location of the veterinary hospital from the goat farmer's home was perceived to be the most severe constraint (rank I) followed by unavailability of timely veterinary service and assistance (rank II); and later by the lesser severe constraint as the poor knowledge about goat diseases (rank III). Lack of awareness regarding the importance of deworming in goats was assigned the fourth rank (rank IV); while poor awareness and knowledge of the importance of vaccination in goats (rank V) were observed to be a lesser serious constraint perceived by the goat bank beneficiaries. In general, managing goat health involves a holistic strategy that considers a variety of variables that may influence health and wellness in goats. For the best possible care of their livestock, goat owners must have access to resources and information on goat health management. The results regarding the constraints in goat health management from the research are in line with observations from the study of Pathade *et al.* (2021) and Rashmi *et al.* (2021); while in contrast with the findings from the study of Saikia *et al.* (2022) and Seetha *et al.* (2021).

Constraints analysis based on the perception of the goat bank beneficiaries on goat feeding management reports about poor financial resources leading to restricted feeding, as the rank one. The high cost of concentrate feed (rank II) and poor availability of green and dry fodder (rank III) were considered as the severe and less severe constraints, respectively; by the goat bank beneficiaries. Poor knowledge about balanced rationing was assigned the fourth rank. In contrast, poor concentrates and mineral mixture/salt lick availability at the village level was observed to be a lesser earnestly perceived constraint (rank V) for the goat bank members.

The feeding practices of goat farmers could be significantly impacted by their limited financial means, which might have result in the restricted feeding of their goats. Goat bank members might not be able to afford enough feed, particularly the concentrates, to meet the nutritional needs of their goats, which could have several adverse implications, particularly for the goat's health and productivity. Reddy *et al.* (2023) reported that the high cost of feed and fodder was perceived to be one of the critical constraints faced by goat farmers in the feeding management area. In contrast, Gill *et al.* (2022) observed and stated that the high cost of concentrate feed was identified as the most severe constraint faced by farmers.

Assessment for constraints in goat breeding management indicates that delayed puberty in goats was perceived as the most severe constraint (rank I), followed by poor knowledge about scientifically recommended breeding practices (rank II) as a severe constraint. In contrast, the poor availability of quality breeding bucks (rank III) was considered as comparatively the lesser severe constraint perceived by the



**Table 1:** Constraints perceived by the goat bank beneficiaries while rearing the goats

Sr.	Constraints	Mean Score	Rank
<b>(I)</b>	<b>Socio-economic constraints</b>		
a	Shrinking of grazing land	60.70	I
b	Poor credit and loan facilities	46.16	II
c	Lowered level of technical education in understanding scientific goat rearing	43.16	III
<b>(II)</b>	<b>Constraints in health management</b>		
a	Distant location of the veterinary hospital from the goat farmer's home	65.57	I
b	Unavailability of timely veterinary service and assistance	58.47	II
c	Poor knowledge about goat diseases	57.31	III
d	Lack of awareness of the importance of deworming in goats	33.96	IV
e	Poor awareness and knowledge of the importance of vaccination in goats	33.39	V
<b>(III)</b>	<b>Constraints in feeding management</b>		
a	Poor financial resources lead to restricted feeding	55.40	I
b	High cost of concentrate feed	49.74	II
c	Poor availability of green and dry fodder	49.17	III
d	Poor knowledge of balanced ration	48.00	IV
e	Poor availability of concentrates and mineral mixture/ salt lick at the village level	47.22	V
<b>(IV)</b>	<b>Constraints in breeding management</b>		
a	Delayed puberty	61.81	I
b	Poor knowledge of scientifically recommended breeding practices	48.13	II
c	Poor availability of quality breeding bucks with the genetic potential	45.38	III
d	Indiscriminate breeding	44.22	IV
<b>(V)</b>	<b>Constraints in marketing management</b>		
a	Middlemen offering lesser remunerative price	67.13	I
b	Distant market for goat sale	66.63	II
c	Transport or logistic difficulties for goat or goat milk sale	66.34	III
d	Lack of institutional intervention or support in goat or goat products marketing	62.26	IV
e	Unorganised goat farmers in the cluster	56.74	V
f	Lack of or poor marketing intelligence to locate a proper market with infrastructural facilities for goat and goat milk sale	55.31	VI
<b>(VI)</b>	<b>Constraints in care and management</b>		
a	Poor knowledge of scientific goat management	64.44	I
b	Poor clarity on the objectives for goat farming	54.50	II
c	Depredation issue by wild animals	33.05	III
<b>(VII)</b>	<b>General constraints</b>		
a	Mortality in goats, kids particularly	56.58	I
b	Smaller herd size	49.49	II
c	Poor extension services rendered at the farmer's doorstep	43.92	III

goat bank members. Indiscriminate breeding (rank IV) was also considered a limitation or a challenge by the members of the goat bank. Delayed puberty in goats can have a significant negative impact on the productivity and profitability of a goat farming operation, making it a severe concern for goat farmers regardless of the cause, which may include delayed reproduction, reduced fertility, genetic factors, nutritional deficiencies, environmental factors, or other factors. The results observed in the present research are in line with

those reported by Gamit *et al.* (2020); while differ from those revealed and reported by Rashmi *et al.* (2021).

Table 1 reveals the constraints faced by goat farmers while marketing management. Amongst these constraints, the middlemen offering lesser remunerative prices was considered the most severe constraint (rank I), followed by the distant market for goat sale (rank II) and transport or logistic difficulties for goat or goat milk sale (rank III) as the severe and lesser severe constraints. The present research revealed

constraints in marketing management that lack institutional intervention or support in goat or goat products marketing (rank IV), followed by unorganised goat farmers in the cluster (rank V). In contrast, lack of or poor marketing intelligence to locate a proper market with infrastructural facilities for goat and goat milk sales was the last, *i.e.*, the least severely perceived constraint (rank VI).

Lack of competition among middlemen, which could result in a scenario like a monopoly where the formers have greater bargaining leverage than goat farmers, was likely one of the reasons why middlemen failed to offer fair rates for goat produce or kids for sale. The results found in the present research work align with those revealed and reported by Sivachandiran *et al.* (2020), and Gunaseelan and Singh (2018). The observations related to the marketing management of goats were found in contrast with those of Gamit *et al.* (2020).

Poor knowledge of scientific goat management was assessed as the most severe constraint (rank I), followed by poor clarity on the objectives for goat farming (rank II) as the severe limitation. At the same time, the depredation issue by wild animals was reported to be perceived as comparatively a lesser severe constraint (rank III). A probable reason for perceiving a lack of knowledge on scientific goat management as the most challenging constraint might be that it can have an adverse impact causing the animals to suffer from infections, parasites, and malnutrition due to poor feeding, immunisation, and cleanliness practices. The results agree with those expressed by Pathade *et al.* (2021), Gamit *et al.* (2020), and Sinha *et al.* (2017).

On analysing the general constraints, it was observed that mortality in goats, mainly amongst kids, was recorded to be the most severe constraint (rank I), followed by smaller herd size (rank II) as the severe constraint. The poor extension services rendered at the farmers' doorstep were perceived to be comparatively a lesser severe constraint (rank III). Farmers may experience financial losses due to mortality in goats, especially the goat kids. If a goat kid dies, the farmer loses the purchasing cost and any future income the goat kid might have brought in. The financial losses may also be more significant if a disease outbreak arises, leading to mortality in multiples. The results in the present research agreed with those put forth by Saikia *et al.* (2022), Sivachandiran *et al.* (2020), and Raja *et al.* (2018).

## CONCLUSION

The study identifies various constraints perceived to be serious by the goat bank beneficiaries, including shrinkage of grazing land, the distant location of veterinary hospitals, poor financial resources, delay of puberty, middlemen offering lesser remunerative prices, poor knowledge of scientific goat production, poor clarity of objectives for goat rearing, and mortality in goats. The study highlights the need to improve access to veterinary care, technical education, and marketing facilities, strengthen extension efforts and promote scientific

feeding, breeding, and management practices to enhance goat production and profitability. The study also reveals the need to address the constraints to improve goat rearing and promote sustainable development in the sector. The present research implies that policymakers must design policies addressing the identified constraints and providing adequate resources to support small-scale farming.

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