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Status of goat marketing in India: A chronological review

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Abstract

Goat farming offers tremendous potential for rural development since it serves as a ready-to-use economic asset for farmers in times of crisis, offering meat, milk, and skin. Goat farming has been increasingly recognized to provide subsidiary employment to small and marginal farmers owing to its distinct economic and management advantages over other livestock. The present article presents a step-by-step review of 34 research studies conducted in the area of goat farming related to production and marketing during the period of 2005-2020. The present study identified the common themes, patterns, and challenges of goat farming in India by analysing the existing studies. Based on the areas covered by the previous research studies, this paper is broadly divided into four major parts; socioeconomics, farm economics, marketing, and constraints. The findings indicate that goat farming in India is characterized by poor socio-economic conditions of farmers and is faced with constraints like low returns, high inputs, and marketing costs, and poor breed and feed management. Hence, there is a need to increase the scale of operations of goat farmers through favourable policy measures like encouraging the formation of goat producer organizations with adequate capacity-building programs.

Highlights

- Goat farming in India is characterized by poor socio-economic conditions of farmers.
- The major constraints faced by goat farmers were low returns, high inputs, and marketing costs, and poor breed and feed management.

Keywords: Commercial goat farming, constraints, farm economics, goat marketing, socio-economics

Introduction

Goats have played a dynamic role in the support of mankind over the last 7000 years in terms of milk, meat, cashmere/pashmina, mohair, and skin. Goats, also referred as “The poor man’s cow” fits in amicably to achieve the inter-dependent objectives of poverty alleviation, availability of food, creation of employment and contribution to rural income. Goats contribute more than 52 percent of the household’s total income towards assuring food and nutrition security of families of goat keepers (Choudhary *et al.* 2018) [4]. Goats are among the main meat-producing animals in India, whose meat (chevon) is one of the desirable meat and has huge domestic demand. Besides meat, goat provides other products like milk, skin, fiber, and manure. Goats are an important part of the rural economy, particularly in the arid, semi-arid and mountainous regions of the country. They provide food and nutritional security to the millions of marginal and small farmers and agricultural laborers. The risk involved in goat farming is much lower when compared to other livestock and crop production. Goat is reported to be more economical than cattle and sheep under natural grazing browsing (Sharma & Jindal, 2008) [27].

India stands the second largest goat producer in the world having 148.88 million goats.

However, the productivity of goats under the prevailing traditional production system is very low (Kumar, 2007) [13]. India ranks first in goat milk production with a production of 6.09 million tonnes of world goat milk production and ranks second in meat production with the production of 504501 tonnes meat. (FAO, 2018). Goat accounts for 27.80 percent of the total livestock in the country and contribute Rs 38,590 crores annually to the national economy (20th Livestock census). The share of goat to the total milk and meat production in India was recorded as 3 percent and 13.53 percent, respectively (BAHS 2019) [7]. India has 34 registered breeds of goats (National Bureau of Animal Genetic Resources, 2021).

Marketing plays an important role in the development of any sector including goats. An efficient marketing system can ensure a reasonable price to the producer and minimize

unnecessary costs and margins and benefit all sections of the society. A study of the marketing system of goats is necessary to understand the opportunities and challenges involved in its marketing. However, the marketing of goat and its products are one of the most neglected areas in India. As a result, it suffers from many drawbacks such as multiplicity of middlemen adding very little utility and their very high margins, avoidable marketing costs, unnecessary transportation and mortality of animals during transit, and

hindrance in exports on account of poor quality and lack of information (Kumar, 2007) [13].

Table 1 shows the distribution of research articles state-wise and year-wise. Among them, Rajasthan has the highest publication followed by Gujarat. Other than this, Uttar Pradesh, Kerala, Uttarakhand, West Bengal, Maharashtra, Tamil Nadu, and Bihar are the states where the work related to goat marketing is majorly conducted.

Table 1: Distribution of research articles

S. No.	Author(s)	Region
1.	Sharma <i>et al.</i> (2017) [28]	UP & Bihar
2.	Patbandha <i>et al.</i> (2018) [22]	Gujarat
3.	Tyagi <i>et al.</i> (2013) [34]	Gujarat
4.	Sorathiya <i>et al.</i> (2013) [34]	Gujarat
5.	Khadda <i>et al.</i> (2015) [10]	Gujarat
6.	Sorathiya <i>et al.</i> (2016) [31]	Gujarat
7.	Sorathiya <i>et al.</i> (2016) [31]	Gujarat
8.	Sabapara (2016)	Gujarat
9.	Gamit <i>et al.</i> (2020) [6]	Gujarat
10.	Bashir <i>et al.</i> (2017) [2]	Kerala
11.	Bashir and Venkatachalapathy (2016) [1]	Kerala
12.	Bashir and Venkatachalapathy (2017) [2]	Kerala
13.	Koli and Koli (2016) [19]	Maharashtra
14.	Tanwar <i>et al.</i> (2008) [32]	Rajasthan
15.	Kumar <i>et al.</i> (2014) [16]	Rajasthan
16.	Tanwar (2011) [33]	Rajasthan
17.	Kumawat <i>et al.</i> (2017) [18]	Rajasthan
18.	Kumar <i>et al.</i> (2019) [12]	Rajasthan
19.	Kumar <i>et al.</i> (2010) [15]	Rajasthan
20.	Lavania and Singh (2008) [20]	Rajasthan
21.	Sangameswaran and Prasad (2016) [24]	Rajasthan
22.	Kumar <i>et al.</i> (2009) [14]	Rajasthan
23.	Siyak <i>et al.</i> (2020) [29]	Rajasthan
24.	Senthilkumar <i>et al.</i> (2012) [25]	Tamil Nadu
25.	Singh <i>et al.</i> (2020)	Uttar Pradesh
26.	Dixit and Mohan (2014) [5]	Uttar Pradesh
27.	Kumar <i>et al.</i> (2018) [11]	Uttar Pradesh
28.	Singh <i>et al.</i> (2011) [30]	Uttar Pradesh
29.	Srivastava and Saraswat (2006) [26]	Uttar Pradesh
30.	Sone <i>et al.</i> (2015) [23]	Uttarakhand
31.	Khadda <i>et al.</i> (2018) [9]	Uttarakhand
32.	Pandit and Dhaka (2005) [21]	West Bengal
33.	Biswas <i>et al.</i> (2008)	West Bengal
34.	Kumar S. (2007) [13]	India

Figure 1 shows the state wise distribution of reviewed articles. Among the several research studies conducted on goat farming, a highest number of studies was conducted in the

state of Rajasthan (10) followed Gujarat (8), Uttar Pradesh (5).

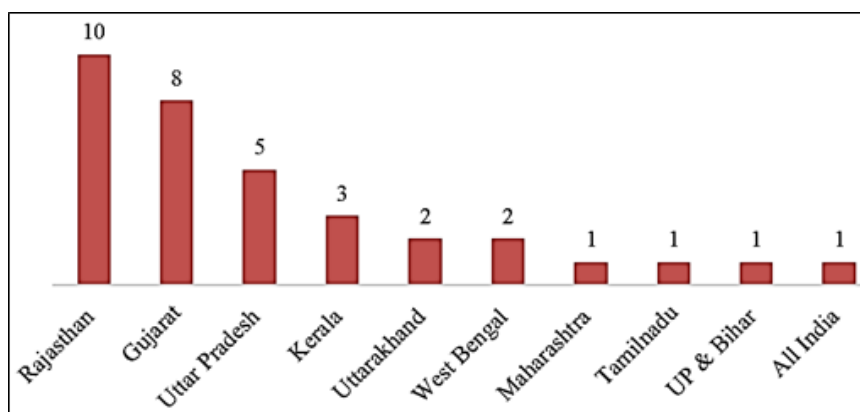


Fig 1: Distribution of research articles state wise

Figure 2 shows the year-wise distribution of reviewed articles. The highest number of papers (6) was published in the year 2016 followed by 2017 and 2018 (4). The graph indicates that

the growing interest of researchers in the distinct area of livestock including goats.

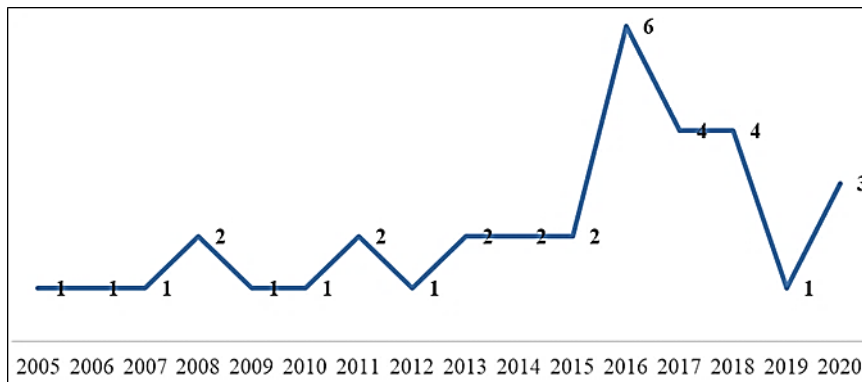


Fig 2: Distribution of number of articles by years of publication

Figure 3 depicts the work done in various areas of goat marketing. The study on socio economic situation has been popular area of past researchers followed by economic

analysis of production and marketing along with constraints analysis.

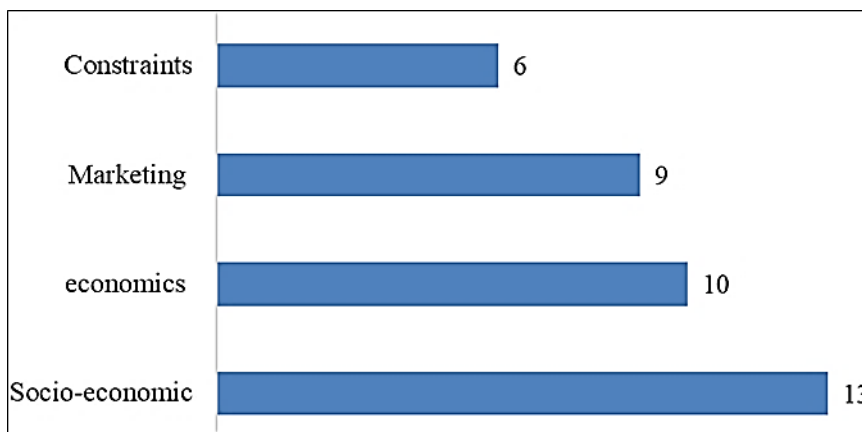


Fig 3: Work done in different areas of goat marketing in India

Research methodology

In general, a systematic review analysis is conducted to evaluate the academic growth and development of any discipline (Williams & Plouffe, 2007) [35]. A literature review of any discipline not only provides an overview of its progress but also identifies research gaps and provides future research directions (Creswell, 2009) [3]. A systematic review process was adopted in this paper for carrying out the literature review on important aspects of goat farming including its production goat marketing. A total of 34 research articles published during the period of 2005-2020 in peer-reviewed/refereed journals were reviewed to identify the common themes, patterns, and challenges of goat farming, and the results were broadly divided into four major parts; socioeconomics, economics, marketing, and constraints. The research papers were considered for the present study.

Results and Discussion

Socio-economic background

Several researchers have reported that the majority of goat farmers were middle age (Tanwar *et al.* 2008; Koli & Koli, 2016; Kumar, 2019; Gamit, 2020; Siyak *et al.*, 2020) [32, 19, 12, 6, 29], illiterate (Koli & Koli, 2016; Kumar, 2019; Siyak *et al.*, 2020) [19, 12, 29], have large size family (Tanwar *et al.*, 2008; Siyak *et al.*, 2020) [32, 29] whereas some have reported that goat

farmers were literate (Kumar *et al.* 2018) [11], have a nuclear family (Kumar *et al.*, 2018; Kumar, 2019; Siyak *et al.*, 2020) [11, 12, 29]. A study conducted by Koli & Koli (2016) [19] in Maharashtra reported that the goat farmers were landless while studies by Tanwar *et al.* (2008) [32], Kumar, (2019) [12], Siyak *et al.* (2020) [29] reported that the majority of the goat farmers had small landholdings. Sorathiya *et al.* (2016) [31] reported that in the high rainfall zone of south Gujarat, the majority of goat keepers had marginal land. Siyak *et al.* (2020) [29] reported that the majority of goat rear belongs to Other Backward Classes (OBC). The majority of the goat farms were observed to have fetched low income from goat rearing and the major occupation of goat farmers was observed to be agriculture + animal husbandry (Kumar, 2019) [12]. In the area of Saurashtra, Gujarat, the farmers reared cow and buffalo with the goat. (Sorathiya *et al.* 2016) [31] Kumar *et al.* (2018) [11] revealed that the majority of goat farmers had the open and kachha type of goat rearing unit and take their goats for grazing. 69.5 percent of goats were taken for grazing two times a day while 4.76 and 26.19 percent goats were grazed during morning and evening hours, respectively. In milk production management practices, most of the farmers adopt the knuckling method as well as chary (Brass pot) for milking and the milk was majorly used for household purposes only (Tanwar *et al.*, 2008) [32].

Koli & Koli (2016) [19] explored the correlation between socio-economic characteristics with the adoption of goat farming technology. They found that the characteristics namely, age, education, family size, annual income, social participation, source of information, knowledge, scientific orientation, economic motivation, and proximity to the urban area had a positive and significant relationship with adoption level. However, the relationship between landholding and herd size with adoption level was found to be non-significant.

Farm economics

With regard to impact of flock size on the net returns of farms, past studies have presented an ambiguous picture. Gunaseelan *et al.* (2019) [81] reported lowest rearing cost among large farmers followed by small farmers. Khadda *et al.* (2018) [9] added that the net return per goat was found highest among large farmers which led to the conclusion that the farmers need to increase their flock size to get maximum profit and minimize cost. On the other hand, Bashir *et al.* (2018) [21] quoted that the small flock size got the highest return per goat per annum and the net profit per goat was decreased with an increase in flock size. The major reason for low benefit-cost ratio was reported as inadequate nutrition and management practices by larger goat keepers (Kumar *et al.* 2014; Bashir *et al.*, 2016; Bashir *et al.*, 2017; Bashir *et al.* 2018) [16, 1, 2].

The sale of the goat was observed as a major source of income followed by milk and manure for the majority of goat farms. (Kumar *et al.*, 2014; Bashir *et al.*, 2016) [16, 1]. Income due to sale of milk, sale of animals, population increase, and manure contributed 49.20, 35.86, 10.84 and 4.10 percent respectively whereas the cost on labor, purchase of animals, medicine and other miscellaneous items contributed 67.50, 5.3, 6.64 and 20.56 percent share in total expenditure. Overall benefit cost ratio of 2.45:1 was reported by the goat farmers in Gujarat (Tyagi *et al.*, 2013) [34] while the share of the variable cost was found higher in goat farming and the overall variable cost contributed was observed as 77.89 percent (Khadda *et al.* 2018) [9].

Study conducted by Singh *et al.* (2011) [30] with the objective to compare of the performance of two breeds (local breed and Barbari breed) have revealed that net income derived by different flock sizes of goats was higher among Barbari breed than local breed. The large flock size of goat keepers achieved higher profits than small and medium flock size in both breeds of goats. Kumar (2007) [13] analyzed the economics of commercial goat farming in India and revealed that several large and progressive farmers, businessmen, and industrialists have adopted commercial goat farming and this activity was helping in realizing the potential of goat enterprise through better access to technical knowledge, resources, and market thereby increasing goat productivity and bridging the demand-supply gap. He also revealed that a majority of commercial goat farms have been found operating with positive net returns and goat rearing was found equally rewarding under both intensive and semi-intensive systems of management. The study suggested that the use of improved technologies, particularly prophylaxis, superior germplasm, low-cost feeds and fodders, and innovative marketing of the product would be the pre-conditions for successful commercial goat production.

Marketing and Marketing channel

Sharma *et al.* (2017) [28] observed that the goats were sold at

the farmer's home itself in the states like Haryana and Uttar Pradesh whereas at some places it was also transported to the town in the weekly market where these were sold through commission agents to the wholesalers and meat by boat, tempo, tonga, and trucks. The reason for the sale in the village was mainly due to the lack of transport facilities that fetches a lower price than that of the prevailing market price. Farmers also tend to sell the goats when there was a need for money. The other reasons for the sale of goats are fear of sickness, and shortage of fodder and difficulty in grazing. The goats was not properly weighted before selling and prices were decided by agents by guessing the meat quantity by holding the loin muscles. Lavania and Singh (2008) [20] stated that animals can be sold whenever the owner wishes to sell them either within the village or in the surrounding areas and there is no difficulty in selling goats as the traders/purchasers come almost daily or at least once a week. The farmers preferred purchasing the goats from the village itself for rearing purposes on 'per head' basis, while the traders/butchers opted more for 'per group' as the unit of purchase of goats. (Kumar *et al.* 2009; Sharma *et al.* 2017) [14, 28]. A study conducted by Srivastava and Saraswat, 2006 [26] concluded that the marketing cost per goat was highest (Rs. 69.28) in the small category followed by medium (Rs. 66.57) and large (Rs. 64.52). The major marketing cost components have been found in West Bengal, as assembling-maintenance, animal preparation, labour and transportation for sellers and market fee, labor and levy for buyers (Pandit and Dhaka, 2005) [21].

According to the study conducted by Senthil Kumar *et al.* (2012) [25], the major marketing channels in Kerala were Goat farmers > Butcher > Consumers (50.00%), Goat farmers > traders > Butchers > Consumers (20.00%), Goat farmers > Commission agents > traders > Butchers > Consumers (15.00%), Goat farmers > neighbouring goat farmers > Butcher > Consumers (10.00%), Goat farmers > Goat producer company > Consumers (5.00%). Bashir and Venkatachalapathy, 2017 [2] also identified the major marketing channels in Tamil Nadu as seller (farmer) > Buyer, seller (farmer) > Broker > Buyer, seller (farmer) > Village Trader > Broker > Buyer.

Primary producers were getting 70.25 percent share for their produced whereas middlemen/agents, wholesalers, and meat dealers received 12, 8.25, and 9.50 percent share, respectively (Srivastava and Saraswat, 2006) [26]. The farmer's share in consumer's rupee varied from 65 to 76 percent when the marketing channel ended within the state and it was less (58 to 60%) when goats were exported to other states (Kumar *et al.* 2009) [14]. In Kerala the channel, which involved the goat producer company was argued as the best supply chain for both goat farmers as well as consumers as it provided maximum profit to goat farmers and provides the cheapest chevon at the consumer level (Bashir and Venkatachalapathy, 2017) [2]. Lavania and Singh, 2008 [20] discovered that the consumer and the producer were adversely affected and the butchers and middlemen were benefited from the goat marketing system. It has also been found that as the number of intermediaries between producer and ultimate buyer increases, the producer's share goes on decreasing (Pandit and Dhaka, 2005; Bashir and Venkatachalapathy, 2017; Khadda *et al.*, 2015) [21, 2, 9].

Constraints

The major constraints faced by goat farmers were feeding, breeding, marketing, and health-related constraints (Kumar *et*

al., 2010; Tanwar, 2011; Kumawat *et al.*, 2017) [15, 33, 18]. Tanwar (2011) [33] revealed that feeding was the main constraint faced by 78.75 percent of goat farmers followed by marketing, health, and breeding by 77.50, 74.25 and 71.11 percent farmers, respectively. The major constraint regarding feeding management was due to the lack of knowledge about balanced feeding, high cost of feeds and fodder, lack of irrigation facilities, non-availability of green fodder, lack of knowledge about the importance of mineral mixture, and shrinking grazing land. The major breeding constraints highlighted in the study were inadequate availability of breeding buck, lack of knowledge about breeding practices, and indiscriminate breeding practice. With respect to health care, the major constraints were lack of veterinary services in villages, high cost of treatment, ignorance about the importance of deworming, lack of knowledge about common diseases and vaccination program not being carried out by any agency (Tanwar, 2011) [33].

Gamit *et al.* (2020) [6] found that the major feeding constraints were lack of green fodder availability and reduction of grazing land and the major feeding constraints were lack of green fodder availability and reduction of grazing land. The breeding constraints were repeated breeding and indiscriminate breeding while in health care the main problem was the abortion problem (86.67%) which may lead to high kid mortality (80.83%). Sone *et al.* (2015) [23] revealed attacks by wild animals emerged as the most severe constraint faced by the goat farmers followed by the high cost of the mineral mixture, non-availability of green fodder throughout the year, and the high cost of fodder.

With respect to marketing, the main constraints reported by Tanwar (2011) [33] were lack of marketing infrastructure, middlemen not fetching remunerative price to male kids, unorganized goat owners, and not even a single agency helped in marketing. The constraints related to marketing were observed to be the most severe constraint, followed by health care, feeding and breeding constraints in western Gujarat (Patbandha *et al.*, 2018) [22]. Kumar *et al.* (2009) [14] found major constraints were high marketing fee/commission (40%), lack of transparency in trading: undercover method of auction (73.3%), very poor access to market/price information (30%), and prevalence of collusive activity of traders (20%). The study also found that the area the goat marketing was characterized by high middlemen's margin, pricing inefficiency, poor participation of farmers in the market, considerable transit losses, lack of access to market information, poor market infrastructure, no focus on food safety issues and no mechanism for regulation, monitoring and ensuring transparency in the livestock markets. The consequences were the majority (91.67%) of the goat farmers reported that less demand for goat milk and 89.17 percent said the low price of milk was a major marketing problem. On the other hand, the traders had very good knowledge of the market, demand and supply situation. Therefore, the farmers were not in a position to negotiate/bargain for price with the traders/butchers. (Kumar *et al.* 2009) [14].

The constraints in commercial goat farming under intensive and semi-intensive systems were the unavailability of specially designed vehicle for transporting live goats, high mortality of goats due to lack of knowledge about the package of practices of improved goat farming, non-availability of vaccine, difficulty in getting good quality breeding animals, and non-availability of institutional credit. (Kumar, 2007) [13]. At the same time, some researchers also found in their results

that the majority of farmers were not facing any constraints (Sangameswaran and Prasad, 2016) [24].

Conclusion

The present study has endeavored to review and evaluate the research studies on goat marketing from 2005 to 2020. A systematic review of 34 research studies highlighted that the majority of the goat farmers lack adequate physical and financial resources and had low incomes. The studies on farm economics of goat farmers revealed an ambiguous picture on the net return per goat which was found highest among large farmers in some cases while lowest in others. The sale of milk and goats was observed to be a major source of income for the goat farmers. Studies have revealed that goat rearing was found equally rewarding under both intensive and semi-intensive systems of management and the majority of commercial goat farms have been found operating with positive net returns. A good number of farmers intends to sell their goats at the village itself despite low farm gate prices, due to lack of adequate and cheap transportation facilities. Goat marketing was characterized by the presence of a large number of intermediaries in the marketing channels. The farmer's share in consumer's rupee was found more when goats are marketed within the state (65 to 76%) and it was less (58 to 60%) when goats were exported to other states. The main challenges that goat farmers face include feeding, breeding, marketing, and health-related issues. Major marketing constraints were high middlemen's margin, poor participation of farmers in the market, considerable transit losses, lack of access to market information, poor market infrastructure, etc.

Scope of future research

It is now vividly clear that goat rearing has enormous potential to play a vital role in the food and economic security of rural people, especially landless, marginal and small farmers. Despite the fact, goat marketing is one of the most neglected fields in India. Numerous studies have elaborated on the impact of flock sizes on the net returns of the farm. Still, there is a need for further research in this area to understand the true relation between the flock size and the net returns per goat. Studies have shown the positive impact of improvised breed on the net income of the farms. More studies can be taken to present the benefits of using improved breed over the local. Future research studies can be directed towards increasing the involvement of goat producer companies for the benefit of goat farmers as well the consumers. Lastly, as the goat population is scattered across India, there is a large scope of conducting relevant studies in this area to help goat farmers improve their livelihoods.

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