



E-ISSN: 2320-7078

P-ISSN: 2349-6800

JEZS 2020; 8(1): 644-648

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Received: 19-11-2019

Accepted: 23-12-2019

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## Socio-economic status and constraints confronted by goat and goat farmers in Saurashtra region

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#### Abstract

A field investigation was carryout conducted to assess the constraints faced by the goat farmers in Saurashtra of Gujarat, India. A well designed questionnaire was administered to 120 goat farmers randomly selected from three major districts of Saurashtra include Rajkot, Junagadh and Jamnagar and one small costal district Porbandar. The aim of this study was to describe the economic, social and nutritional importance of goat farming in the Saurashtra region and to identify critical constraints and opportunities for use in future development initiatives. The present study showed that majority (95.83%) of heads of households were males, of which 44% were middle age (31-50) and 66% of them were have animal husbandry as primary occupation. Most respondent have major constrain in feeding were lack of green fodder availability (75.83%) and reduction of grazing land (64.17%). In constrain of breeding major problems were repeat breeding (82.50%) and indiscriminate breeding (68.33%) while in health care main problem was abortion problem (86.67%) which may leads to high kid mortality (80.83%). Majority 91.67% of the goat farmers reported that less demand of goat milk and 89.17% said low price of milk was casing marketing problem. Hence, by developing good extension practices with awareness plan will leads to improvement of socio-economic status, which ultimately lead to small ruminant animal development.

**Keywords:** Constraints, grazing, breeding, abortion

#### Introduction

Goats have been associated with human since beginning of agriculture and domestication of animals, making them socioeconomically, a very important animal providing different products and service to man throughout the world, especially in developing countries [1]. India is contributing 11.6% of total livestock in world and 17.93% of which is contributed by goats. The share of goats to the total milk yield and meat production of India was recorded 3.5% and 14.22% respectively 2016-17 [2]. The credit for largest milk producing country goes to India, followed by Bangladesh and Pakistan. The maximum goat milk producing state in India is Rajasthan, Uttar Pradesh, Madhya Pradesh followed by Gujarat [2]. In India, more than 90 percent of small ruminants are owned by landless and marginal farmers. The average milk production of small ruminant like goats vary knowingly among major milk producing countries is about more than 100 kg/year [3]. Goat milk is wholesome, easily digestible and has medicinal properties. They are universally considered the "poor man's cow" and are the major source of animal protein like milk and meat for many subsistence farmers in tropical regions [4]. Because of these fast socio-economic changes in the recent past, a rapid shift has taken place in the dietary habits in favour of non-vegetarian diet. As a result, the demand for goat meat has swiftly increased and the domestic market price [5]. Goat is one of the major livestock species contributing to the livelihood security of farmers in Gujarat. Day by day the goat is being a significant food source, because of its ability to convert poor quality feed in to valuable human food as well as other resources. Gujarat has about 49.58 lakhs of goats. Gujarat has about 49.58 lakhs of goats and this goat population is 190 % more than the sheep population in the state [6] and these statistics indicate a significant role of goat farming in Gujarat. The goat breed diversity in Saurashtra region of Gujarat is reflected in the form of four distinct goat breeds namely, Zalawadi Gohilwadi, Kutchi and recently recognized breed Kahmi. Small ruminants like goat contribute economically great to the agrarian society, especially in areas where crop and dairy farming are not much economical, and play a significant role in the livelihood of a large proportion of small and marginal farmers and landless labourers. However, like goat keepers of arid or semi-arid region they also face

various constraints which limit their profitability. Responding to the market gestures, the goat production system in West Gujarat has been slowly moving, however in the absence of any systematic study in Saurashtra region there have been questions from the entrepreneurs, farmers and even scientists on the economic viability and sustainability of profitable goat farming under intensive system. Very scanty information was available on the socio-economic aspects and constraints faced by goat farming under field condition in Gujarat. Goat keepers around Saurashtra face several problems like lack of knowledge and awareness about scientific feeding, availability of good breeding germplasm, high treatment cost, lack of marketing facility in nearby area and problem of predator which hinders their production potentials and results in to more economical losses to owner of small ruminants. By detecting different constrains faced by goat farmers in Saurashtra area, this study helpful to evolve an appropriate strategy framework for goat owners suggest suitable policy measures to overcome the hurdles faced by small ruminant farmers.

### Materials and Methods

The present study was conducted in Saurashtra region of Gujarat during 2018. The survey was conducted by way of personal interviews with traditional goat farmers, saleable goat farmers, butchers and traders who had small flock and

some marketers for principal survey. Data was collected randomly from four different districts of Saurashtra region mainly included three major districts Rajkot, Junagadh and Jamnagar and one small costal district Porbandar. Total 120 respondent goat farmer were selected out of this random sample of 40 goat-keeping households from Junagadh, 30 each from Rajkot and Jamnagar and 20 households from costal region of Porbandar were covered in the study. Majority selected respondents were rearing goats under extensive production system with some of the respondents were seasonal migraters during summer. Gohilwadi and Kutchhi breeds of goat were major population in study area and some of the farmers had local non descriptive goat breeds. The collected data were compiled, tabulated and analyzed to interpret the results. The descriptive statistics like frequency and percentage were used for the investigation. An attempt was made to identify the constraints faced by the goat farmers in Saurashtra region to seek out suggestions of farmers to overcome the difficulties faced by them. Many constraints faced by the farmers hinder the production and hence, desired production could not be achieved. Constraints faced by farming community can never end but they can be minimized if we make suitable policy and reliable plan.

### Results and Discussion Socio-economic profile

**Table 1:** Socio-economic profile of goat farmers (n=120)

Sr. no.	Parameters	Frequency	Percentage (%)
<b>Education</b>			
1	Illiterate	53	44.17
	Literate	67	55.83
<b>Age of farmers</b>			
2	Young ( $\leq 30$ yrs)	34	28.33
	Adult (31-50 yrs)	53	44.17
	Old ( $>50$ yrs)	33	27.50
<b>Sex</b>			
3	Male	115	95.83
	Female	5	4.17
<b>Primary occupation</b>			
4	Agriculture	29	24.17
	Animal Husbandry	79	65.83
	Self-employment/ others	12	10.00
<b>Goat farming experience</b>			
5	1-2 years	14	11.67
	$> 2$ years	106	88.33

The data about profile parameters of Ahir goat keepers are presented in Table 1. It revealed that majority of respondents were in middle age category and involvement of youths was very less. Similar result was also reported by Sorathiya *et al.* (2013). The higher literacy rate and education level observed among Ahir goat keepers was quite higher than migratory goat keepers of other caste in present study was in accordance with the findings of Patil *et al.* (2012). The good education level in Ahirs might be associated with their non-migratory nature. Majority of respondents in present study were marginal land holders and similar findings were also reported earlier. Majority of Ahir goat keepers had medium flock size of 25-50 heads which are quite higher than goat keepers of other castes. The annual income of 52% respondents was more than Rs. 25,000 from goat rearing. Hence, it could be said that Ahirs under study are getting good employment by goat rearing.

The data about Socio-economic profile of goat farmers are

presented in Table 1. Literacy is one of the important factors which accelerates development and progress of any enterprise. Present study revealed that more than half of respondent were Literate (55%) Similar result was also reported by [7, 8]. Age is the time that a person has lived for or it is the length of existence. In present study most of the goat farmers (44.17%) were middle- aged with the age range 31 to 50 years whereas 27.50% were in the old age group. The findings of [7, 9, 10] were in line of the present study it indicate that involvement of youths was very less. Goat farming enterprise in Saurashtra region, the households surveyed (n = 120), only 4.17% of the farmers were female while Majority (95.83%) of d goat owners household heads were male this finding contest with [11, 12] but some findings of [13, 14] where completely alter from present finding which might be due to regional variation. Present study directing that most of famers (65.83%) were have primary occupation as animal husbandry similar result observed by [9]. Majority of goat keepers had

more than 2 years experiences of about 106 respondents (88.33 %), followed only 14 respondents (11.67 %) has been new in goat keeping this finding where nearby <sup>[15]</sup>.

### Feeding constraints

**Table 2:** Feeding constraints (n=120)

Sr. no.	Parameters	Frequency	Percentage (%)
1	Lack of knowledge about balance feeding	11	9.17
2	Problem of green fodder	91	75.83
3	Problem of dry fodder	30	25.00
4	High feed and fodder cost	58	48.33
5	Lack of knowledge on concentrate feeding	56	46.67
6	Reduction of grazing land	77	64.17
7	Unaware about mineral mixture feeding	66	55.00
8	Humiliation by forest people	30	25.00
9	Water problem	17	14.17

Feeding management is one of the most important factors in any livestock farming because most of the cost in livestock farming coming from feed. So feeding constrain directly affecting economics of goat farming. The constraints associated with feeding practices are presented in Table 2. Problem of green fodder was majorly observed in (75.83%) and problem of dry fodder was three time lesser than green fodder availability in the study area, present finding were nearer to <sup>[16]</sup>. High feed and fodder cost faced by almost half of respondent (48.33%) which was causing great economic loss to goat farmers, this finding is consistent with the observation of <sup>[17, 18]</sup>. Nearby half (46.67%) of goat keepers in the study area informed that they were lacking in knowledge on concentrate feeding to goat. Reduction of grazing land (64.17%) was observed in present findings which was in a similar line of <sup>[19, 20]</sup>. Lack of grazing land was the most important constraint because reduction of grazing area which resulted reduction of net income per goat under extensive production system. Present area of study also shown that goat farmers were (55%) Unaware about mineral mixture feeding <sup>[16, 21, 17]</sup> also find same kind of observation in their observations. Few of the goat keepers in the study area articulates that they were not generally humiliated by the forest people (25.00%) this finding were more or less comparable with observations of <sup>[22]</sup>. Water problem in present study area for goats was observed very rare (14.17%) because most of area in present study either well irrigated or

they have watering facility for animals.

### Breeding constraints

**Table 3:** Breeding constraints (n=120)

Sr. no.	Particulars	Frequency	Percentage (%)
1	Breeding buck problem	31	25.83
2	Indiscriminate breeding	82	68.33
3	Lack of knowledge on breeding practices	19	15.83
4	Repeat breeding problem	99	82.50
5	Lack of knowledge on breeding buck selection	28	23.33

Breeding of goat is a very important process for any goat famer. A large portion of the India's goat population is maintained under free ranging conditions in which controlled mating are not possible. Thus, the mating system may approach random mating. The breeding program for goats in India has not been set up yet, due to so many problem faced by goat owns. A sound breeding objective is the basis for genetic improvement in overall economic merit of farm animals. The constraints associated with breeding are presented in Table 3. It revealed that breeding buck problem (25.83%), Indiscriminate breeding (68.33%), Lack of knowledge on breeding practices (15.83), Repeat breeding problem (82.50) and Lack of knowledge on breeding buck selection (23.33%). Breeding buck problem, lack of knowledge on breeding practices and lack of knowledge on selection of breeding buck is not a considerable problem in study areas, this finding where opposite to finding of <sup>[23, 24]</sup> but <sup>[25]</sup> finds nearby proportion if his study. But major problem observe in present study area is repeat breeding it might be due to lack of knowledge regarding goat's seasonal poly-estrous characteristics during certain times of the year <sup>[26]</sup>. This repeat breeding problem can be minimize by instructing farmer regarding proper selection of breeding buck and breeding time. Present study area most of farmers are illiterate and don't have scientific knowledge of breeding so problem of indiscriminate breeding is high similar result seen in other study <sup>[18]</sup>. To overcome this problem farmers are advice to keep more number of male in flock which will increase the competition between breeding bucks and female also look for repeated matting with other buck <sup>[27]</sup> this will give better conception rate.

### Health care constraints

**Table 4:** Health care/ disease control constraints (n=120)

Sr. no.	Particulars	Frequency	Percentage (%)
1	Lack of availability of health service in village	38	31.67
2	High treatment cost	85	70.83
3	Vaccination program not carried out by any agency	80	66.67
4	Lack of knowledge on importance of deworming	52	43.33
5	Lack of knowledge on common disease	20	16.67
6	Lack of knowledge on importance of vaccination	71	59.17
7	High kid mortality	97	80.83

Economic losses caused by reduced production, cost of prevention of disease, cost of sick animal treatment & possible death of infected animals are major concern in goat farming. Vaccination, dipping, deworming regular screening are some of the routine health management practices which must be perform to keep flock healthy, viable and

economically profitable. The finding of study presented in Table 4 and it indicated that High kid mortality (86.67%) most serious constraint followed by High treatment cost (70.83%). High cost medicine is one of the causes for high mortality rate among the goat similar results was reported by <sup>[18, 28]</sup> they pointed out that high cost of drugs were the major

constraint faced by the small ruminants farmers. Vaccination program not carried out by any agency (66.67) and Lack of knowledge on importance of vaccination (59.17%) to goat owners was one of the big problem in study are due to that economic losses associated with diseases, small flock size were more observed, similar finding were also reported by [18, 21, 29]. Internal and external parasites infestation leads to a significant danger to the health of small ruminants. Parasites can damage the gastrointestinal tract, which results in reduced reproductive performance, reduced growth rates, less prolificacy in terms of meat, fibre and milk and even death may occur this kind of situations were prevails in present study areas which shows lack of knowledge on importance of deworming (43.33%), Lack of availability of health service in village (31.67%) and Lack of knowledge on common disease (16.67%) similar results were observed by [21].

### Marketing constraints

**Table 5:** Marketing constraints (N=120)

Sr. no.	Particulars	Frequency	Percentage (%)
1	Lack of market infrastructure availability	30	25.00
2	Long distance market	74	61.67
3	No agency help in marketing	66	55.00
4	Middle man problem	62	51.67
5	Low price of goat milk	107	89.17
6	Less demand of goat milk	110	91.67

The constraints linked with marketing are presented in Table 5. By selling of live kids and adult goat major contributor (60-80%) of the gross returns from goat rearing activity. In India for small ruminants like sheep and goat there are very few markets. Marketing of these animals was observed both at doorstep and to some extent in weekly markets or in case of migratory flocks, on the route of migration [30]. Anyhow in India the marketing of goats was more suffering due to more involvement of middlemen and gathering tall revenue margins, needless marketing prices, leading to exploitation of both producers and the consumers [31]. In present study demand of less goat milk (91.67%) and low goat milk price (89.17%) were major constrain this result agrees with the finding of [32, 33]. Long distance of market (61.67%), No agency helping in marketing (55.00%) these results are in accordance with those published in the literature [25, 34]. Present study reveal that Middle man problem (51.67%) and Lack of market infrastructure availability (25.00%) leads to backyard goat farmers in getting their reasonable profit. To overcome these constraints [25] suggested that steps must be taken by authorities for regularization of marketing facilities. Proper, organised or government agency should be set up for price fixation of the goats. Goat co-operative society might be set up similar to that of dairy co-operative society.

### Miscellaneous constraints

**Table 6:** Miscellaneous constraints (n=120)

Sr. no.	Particulars	Frequency	Percentage (%)
1	Theft/ robbery problems	63	52.50
2	Predator/ wild animal attack	60	50.00
3	Road accident/ injuries	93	77.50
4	Labour problems	28	23.33

For instance 83.1% of the respondents pointed out that they

do not engage in the production of goats due to the lack of a formal market while 4.8% complained of stock theft Some of the miscellaneous constrains presented in Table -6. It is clearly evident from Table-6 that present area goat farmers preached that Road accident/ injuries (77.50%) was major problem followed by Theft/ robbery problems (52.50%), Predator/ wild animal attack (50.00%) and Labour problems (23.33%). Theft of goats and kids and nuisance of attacks by dogs/wild animals which is very serious constraint in present study area this is particularly seen in the villages near to the forests areas where wild animals (leopard) are concentrated. In this regards, the farmers are advised that the housing and close supervision of young animals are necessary to avoid the attack of predators this finding were in line with the findings reported by [16, 35]. Due to lack of availability of marking of goat formal problem of theft/robbery was observed same observed as of [36]. In this study problem of labour was very intermittent it might be due to most owners family members were involve in all the activities or might be due to high cost of farm labour which is in accordance with the findings reported by [35].

### Conclusion

Result revealed that the goat farmers of Saurashtra region faced major problem in demand of raw milk for consumption and whatever milk they are selling they don't get sufficient price followed by limited grazing land availability, high kid mortality and Predator/ wild animal attack. No agency helping for marketing to the goat keepers which forced them to migrate from one place to another for better market. High percentage of road accident, Theft/ robbery problems and long distance market reduce the economic loss to goat farmers. Lack of knowledge on importance of vaccination, deworming, awareness of common disease leads high mortality in flock was also major constrain faced by study are farmers. Amended extension services with awareness plan will leads to improvement of socio-economic status, which ultimately lead to animal husbandry development.

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