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Improving Goat Production in the 'Coconut Triangle' of Sri Lanka

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Abstract

A field survey was conducted in the districts of Kurunegala and Puttalam in the 'Coconut Triangle', to study the goat production systems in the area, and the problems faced. A random sample of 150 goat farmers, from 5 villages in the two districts,were interviewed using a structured questionnaire. Goat farms of three different herd sizes- small herd (<5 goats), medium herd (5-10 goats) and large herd (>10 goats) exist in the area. These farms differed in resource characteristics. Women are more involved in rearing of goats. 'Contract leasing' of goats reared was observed among small herd farmers. Large herd farmers provided special housing to goats. Small herd farmers do supplementary feeding of goats. Controlled herded feeding on grasses and shrubs is common or goats roam freely. Goats are sold on the basis of their live-weight. A lack of extension services for goat production exists in both the districts. Goat farmers had poor knowledge on improved nutrition, better disease control, and breeding superior breeds. Some policy implications for developing goat production are discussed.

Introduction

Goat is an important species in the livestock-farming sector of Sri Lanka. Goats contribute significantly to the agrarian economy, especially in the areas where crop and dairy farming are not economical. They play an important role in the livelihood of a large proportion of small and marginal scale farmers and landless labourers. However very little attention has been paid to improve this indigenous wealth of livestock. Sri Lanka has a goat population of 0.59 million, of which the majority is concentrated in the dry and intermediate dry zones of the country. A large share of the goat population is concentrated in the districts of Jaffna, Kilinochchi, Mannar, Batticaloa, Trincomalee, Anuradhapura and Amparai in the dry zone and Kurunegala, Puttalam and Badulla in the intermediate zone (Agricultural of Statistics of Sri Lanka, 1995).

Kurunegala and Puttalam districts, in the dry intermediate zone of the "Coconut triangle" have together the second largest goat population of 107,700 goats (18.2% of total) in the island. The low rainfall pattern and poor herbage production in the districts is not favourable for cattle rearing, but is admirably suitable for goat husbandry. Traditionally, the smallholder farmers and other low-income groups in the districts rear goats in small numbers.

With the rise of percapita income levels of the Sri Lankan population, there has also been an increasing trend in the demand for protein foods among the people. The demand for mutton and goat milk had increased in the recent past, but the supply side had not kept pace with it. Earlier studies on goat production in eastern Sri Lanka (Nadarajaa, J. & P.Sivarajah, 1994; Sivarajah & Hariharan, 1993;) had highlighted the problems of goat farmers, and the need for more state intervention in the sector.

This paper looks into the nature of the goat production systems in the 'Coconut Triangle' districts, and suggests some policy options for improving goat farming in the area.

Research Design

The study was conducted through a field survey carried out during1993-94 period. From both the districts of Kurunegala and Puttalam, five goat-rearing villages were selected in total for the study. Four villages, namely Polontalawa, Nammuwawe, Rasanayakapura (Mawattagama) and Ottukkulam, in the Kurunegala district; and one village - Medekkolony, (Meduwakkulama) in the Puttalam district were selected.

A random sample of 150 goat farmers from the five villages in the two districts was selected, using the Grama Niladhari's household's list. A pre-tested structured questionnaire was used for the field survey, and the single visit method was employed for the interview conducted to collect needed data (Mahusoon, 1998).

Data Analysis

Data collected was analyzed using SPSS/ PC+ packages. The filled questionnaires were divided into three categories based on the herd size of goat farms as follows:

a. Less than 5 goats/herd – small herd;

b. Between 5-10 goats/herd – Medium herd; and

c. More than 10 goats/herd – Large herd.

Further analysis of the questionnaires was based on the herd sizes identified above.

Results and Discussion

Goat farm characteristics

Of the 150 households surveyed, 64.8% had large herds (>10 goats), whereas 25.2% and 10% of them had medium herds (5-10goats), and small herds (<5 goats). The major reasons contributing for a majority of farmers keeping large herds is that, firstly farmers mainly raise goats for meat purposes. Secondly goats considered traditionally as an 'emergency income' source. Thirdly the availability of extensive browsing lands, fallow paddy lands and the suitability of the climate favour the keeping of large herds.

On the average each family had about 5 members, against a higher figure of 6 observed by Sivarajah & Hariharan

(1994) in the eastern region. Farmers with a large herd size were more educated than others. But a majority (93%) of small herd farmers had less than 5 years experience in goat rearing, while 59% of large herd farmers had more than 10 years experience(Table 1)

Average annual goat farm income was highest among large herd farmers (Rs.10,920), and it constituted about 55% of their total household income. Whereas this figure was Rs.3,700 for small herd farmers and it's share of total income was only 24%. It was observed that goat rearing was a full-time job for a majority of large herd farmers (>86%), compared to the others. But a family size of 6, with a lower annual goat income was observed by Sivarajah & Hariharan (1994) in the eastern region.

Resources of goat farmers

The survey also revealed that the resources owned by the goat farmers varied according to herd size. Table 2 below shows the resources owned by the goat farmers under different herd size categories.

A majority (>85%) of goat farmers reared local/indigenous goat breeds, while only about 20% of the large herd farmers had crossbreeds; an observation similar to that in the eastern region (Hariharan & Sivarajah, 1993). This is attributed to herd ownership, as it was evident from the data that more than 77% of medium and large herd farmers owned the goats, whereas about 53% of small herd farmers had 'contract leased' the goats from other villagers, thus mainly raising goats leased, rather than owned.

Table 1: Characteristics of Goat farmers

	Herd Size				
Features	<5	5-10	>10	Mean	+SD
Avg.Family size	4.3	4.7	5.3	4.8	0.5
Educational level (%)					
No schooling	10.1	8.8	2.1	7.0	4.3
<5 yrs.	40.7	40.9	42.7	41.5	1.1
5-10 yrs.	42.1	42.9	52.0	45.7	5.5
>10 yrs.	7.1	7.4	3.2	5.9	2.6
Avg. annual income /HH (Rs.)	15781	17400	19362	17514	-
Avg. annual goat income /HH (Rs.)	3705	7150	10920	7258	-
Goat income as % of Total	23.5	41.1	54.6	39.7	-
Occupation					
-Full-time (%)	41.8	63.7	85.8	63.8	22.0
-Part-time (%)	58.2	36.3	14.2	36.2	22.0
Goat rearing experience					
- upto 5 yrs. (%)	93.4	33.6	9.5	45.5	-
- 6-10 yrs. (%)	6.6	33.9	31.8	24.1	-
- >10 yrs. (%)	0.0	32.5	58.7	30.4	-

Source : Field Survey, 1993/94

Table 2: Resources of Goat farmers

Item	Herd size				
	< 5	5-10	>10	Mean	+SD
Goat breeds (%)					
-Indigenous	90.2	85.8	79.3	85.1	5.5
-Crosses	9.8	14.2	20.7	14.9	5.5
Avg. farm size (ha.)					
-highland	0.7	0.9	1.1	0.9	0.2
-lowland	0.4	0.5	0.9	0.6	0.4
Herd Ownership					
Own	46.7	76.9	86.7	70.1	20.8
Leased	53.3	12.8	13.3	26.5	24.4
Both	0.0	10.3	0.0	3.4	5.9

Source : Field Survey, 1993/94

Goat management systems

Survey revealed that goat management systems varied according to herd size with respect to housing, disease occurrence, feeding and awareness of good management practices. Table 3 provides a summary of the goat management features.

It was found that goat rearing was managed mainly (>61%) by housewives (a similar observation was reported for the eastern region by Nadarajaa, & Sivarajah, 1994), and goats was preferred to cattle due to their ease of rearing (88% respondents), low input needs (84% respondents), and high prices fetched (72% respondents). A majority of goat farmers (>68%) were interested in increasing their herd size.

Although special housing was provided to goats (>83% farmers), nevertheless only 13% of small herd goat farmers used the raised floor sheds, which is a more appropriate housing system for goats. Supplementary feeding of goats was practiced by more than 67% of small herd farmers, while it was observed only among 21-40% of the other farmers. Night feeding was practiced by small herd goat farmers (33%) during the dry season, whereas it was seemingly low during the wet season (5%). Controlled herded method of feeding was more common during the dry (avg. 68%) and wet seasons (avg.71%). Unawareness of male goat castration was observed among the goat farmers (avg.65%), which is a very important management practice for rearing goats for mutton production.

Marketing of goats

Selling goats annually was common among the large herd farmers (>73%

farmers), but the pattern of sale was limited to a certain period of the year. About 4 to 9 goats are sold annually by small to large herd farmers. Most of the goat farmers were selling goats on the basis of liveweight of animals at an average price of Rs.42.3 per kg.

Adult male goats were sold at an average price of Rs.1150/ goat, and adult female goats at a price of Rs.1091 per goat. More than 82% of the goat farmers reported that the buyers were from other villages, and marketing was not a problem.

Extension Services

The urgent need for extension services on goat production was evident, as there was a lack of contact between goat farmers and government extension workers in the study areas (Table 4). Only about 14% of the goat farmers had links with extension workers, while 68% of them stated the need for extension services related to goat production. The type of extension services required ranged from information on improved nutrition (31% farmers), improved disease control methods (18% farmers), and breeding bigger breeds (43% farmers).

Table 3: Management of goats

Features	Herd Size				
(% reporting)	<5	5-10	>10	Mean	+SD
Mgt. Involvement:					
-husband	10	13	10	11	-
-wife	56	60	17	61	-
-others	34	27	23	28	-
Housing:					
-provide special house	63.4	88.0	98.1	83.1	17.8
-raised floor housing	13.3	50.6	66.7	43.5	27.4
Feeding goats:					
Supplementary feeding –Yes	66.7	39.7	20.8	42.4	22.9
Feeding system-					
-Dry/Wet season (*)					
Stall feeding	20(13)	15(3)	8(0)	14(5)	-
Tethered	23(20)	21(18)	10(11)	18(17)	-
Controlled herded	32(27)	49(58)	68(71)	49(52)	-
Free to roam	25(40)	15(21)	14(18)	19(26)	-
Night feeding-Yes	33(7)	13(3)	13(5)	20(5)	-
Male goat castration					
- unawareness	60.0	73.4	60.4	64.6	7.6

Figures within brackets (*) – Wet season feeding
Source : Field Survey, 1993/94

Table 4: Extension Services-Availability, Need and Type

Attributes	Herd Size <5	5-10	>10	Mean
Govt. Ext. officers visit				
To help/advice – Yes (%)	10	13	19	14
Need extension service/advice	53	72	80	68
Type of extension programs				
required- improved nutrition mtds.	25	29	39	31
- improved disease control	15	19	21	18
- breeding larger breeds	38	40	52	43

% reported in each category

Source : Field Survey, 1993/94

Table 5: Problems encountered in goat production

Attribute	Herd Size <5	5-10	>10	Mean
Face problems – Yes (%)	90	93	94	92
Type of problem (%)				
- Lack of feed	40	45	57	48
- Diseases	25	28	41	31
- Nuisance to others	22	16	9	15

% Reporting in each category

Source : Field Survey, 1993/94

Problems in goat production

A majority of goat farmers (>90%) stated that they faced certain problems in rearing goats in the area (Table 5). Some of the problems reported were the lack of feed (48% farmers), occurrence of diseases (31%farmers), and being a nuisance to others in the village (15% farmers). Mainly small herd farmers, who reared goats at home, had the last problem, which was caused by goats going to neighbours gardens and compounds for feeding.

Conclusions

Goat farms of three different herd sizes-small herd (<5 goats/farm), medium herd (5-10 goats/farm) and large herd (>10 goats) exist in the area, which varied in resource characteristics such as family

size, land size, experience, educational level, and type of breeds reared.

For large herd goat farmers, who are mainly full-time farmers, goat income was about 55% of total income indicating the importance of the activity as an income source. Women (housewives) are more involved in rearing of goats. 'Contract leasing' of goats reared is being practiced by more than 50% of small herd farmers who mainly had indigenous goats.

Special housing is being provided to goats mainly by large herd farmers (>98%), with a raised floor. Night feeding is not a common practice among goat farmers, during both the dry and wet season. Supplementary feeding is done, to a larger extent by small herd farmers, both during the dry and wet seasons. Controlled herded feeding on grasses and shrubs is commonly practiced or goats allowed to roam freely. Castration of male goats is rarely practiced.

Marketing of goats is not a problem to farmers. Goats are sold on the basis of their live-weight. There is a lack of extension services for goat production in both the districts. Goat farmers had poor knowledge on improved nutrition, better disease control, and breeding superior breeds. Majority of goat farmers faced problems of feed shortages and the occurrence of diseases.

Policy Implications

Since 65% of goat farmers had large herds that comprised of about 80% indigenous breeds of low performance, it is vital to introduce suitable crossbreeds (such as Jamuna-pari or Kondakachchi) of superior productivity to increase mutton production.

The management of goat farms (>60%) is done by housewives, and thus the need to have trained women extension workers to disseminate information on new practices. Creating awareness and training in castration of male goats reared for mutton production is vital to increase bodyweight of the animals.

There is a need to create better links/ contacts between goat farmers and extension workers, and in formulating extension programs related to goat production. Better disease control and breeding techniques in goat production should be taught by the veterinary services in the area.

The problem of lack of feeds for goats, especially during the dry season, could be solved if identification of alternative feeds is carried out in the districts.

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