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The rearing system of goats in Mahaoya Veterinary Range in Ampara District, Sri Lanka

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Abstract

Goats are significant component of livestock industry having adaptableness to unfavorable climates which make them fit for landless and marginal farmers. Mahaoya is the potential place for goat farming in Ampara district but the baseline data on the status of goat farming in Mahaoya is not available. These data are essential to implement any development projects in goat farming. In this context a study was framed to find out the current status of goat farming and to identify the potentials to develop the goat farming in Mahaoya veterinary range. A survey of goat farmers was conducted in Mahaoya veterinary ranges in Eastern Province. A pre-tested structured questionnaire was administrated to randomly selected goat farmers. 120 goat farmers were coded and entered in Microsoft Excel and transferred into SPSS for analysis. Majority of the farmers kept local breeds of goats. Farmers exhibited limited knowledge on goat farming and improved management. They reared goats mainly for commercial purpose. Goats were reared primarily under Extensive management system. Heard size was generally >20 in Mahaoya. Local breed was available in most of the farms in the surveyed area. Natural breeding was the prominent method of breeding in Mahaoya veterinary ranges (100%). In range goats were allowed to graze for more than 8 hours per day and fodder tree, fodder grass, concentrate and crop residues were used as feed sources in this veterinary range. In Mahaoya veterinary range 90.5% of the meat was sold to middle man. Veterinary service was not adequate for Mahaoya veterinary range and farmers were faced constraints related to feeding, breeding, health and management. In conclusion, it revealed that the goat farming is popular among rural people as it plays a significant role in economy and nutrition of rural poor. However there is an urgent prerequisite to develop a strategy in respect of breeding conservation and goat management in Mahaoya. The results of this study will help to design programs to meet such specific needs of farmers to uplift their farming conditions.

Keywords: Herd size, local breeds, feeding, veterinary range, extensive management system, fodder grass.

Introduction

Livestock is a remarkable component in small holder agricultural pursuits in all agro ecological zones in Sri Lanka. Goats can be adapted to changing environmental circumstances and the diverse dietary systems where they were grown. The goat (*Capra hircus*) is recognized as "Movable Wealth" for small and marginal farmers and land less labours. It has incredible potential and projected as the "Animal of Future" for rural prosperity and its rearing is a good subsidiary occupation[1].

Food and nutritional necessities of the rural poor have been being satisfied by goats. Goats can efficiently survive on available fodder and pasture grasses in unfavorable environments. Goats referred as essential in socially backward people since they offered regular income and being a part of livelihood strategies[2]. Less initial investment, low input requirement, higher prolificacy, early sexual maturity, and ease in marketing are the distinctive advantages of goat rearing over other livestock[3].

In the developing countries, goats make a very valuable contribution especially to the poor in the rural areas. The importance of this valuable genomic resource has not been entirely identified and its extent of contribution to the livelihood of the poor is inadequately understood. Yet goat farming is still developing at a slow rate, the goat industry has a vast potential to improve the economy of Sri Lanka. According to Department of Animal Production and Health[4] in Sri Lanka, about 75% of goats are raised in dry zone and intermediate zone where climatic conditions are more suitable for goat production.

The dry zone of Sri Lanka has been considered perfect for extensive development of goat farming, which would create additional income for farming. However, the goat faming system in Mahaoya has not obtained adequate consideration in studies on small ruminant production.

Therefore there is an urgent need to well establish the socio-economic status of the goat farming in the Mahaoya region, recognize critical constraints and opportunities which could impact on the potential expansion of the goat farming activities. The results of this study affords a basis for design programs that can endure and increase goat productivity and as a result meet the needs of rural poor in Mahaoya veterinary range.

Materials and methods

A survey of small scale goat farmers was conducted in Mahaoya veterinary range which is located in Mahaoya D.S Division in the Ampara district. Mahaoya denoted as Dry zone low country in Srilanka. In the survey 120 goat farmers were randomly selected in Mahaoya veterinary range. Structured questionnaire was designed for the study and consisted, before the commencement of data collection. The questionnaire was entailed socio economic information of goat farmers, infrastructure facilities availability, information about rearing of goats, veterinary service and prevalent diseases and constraints of goat farming. Before the commencement of the data collection, the questionnaire was pre-tested to assess the suitability of questionnaire. Primary data were collected from goat farmers by face to face interview with structured questionnaires. Secondary data were collected from Department of Animal production and health, Divisional Secretariat of each area and Department of census and statistics. All the data were gathered from filled questionnaires, checked, coded, entered in Microsoft excel spread sheet and transferred to SPSS (Static Package for Social Science) for analysis.

Results and discussion

Socio economic characters of Goat farmers in Mahaoya veterinary range: Table-1, indicates that, majority (80%) of the farmers were male while only 20% were females. The finding is line with Adams and Oheneyankera[5] who defined that due to societal rules and norms, male participate more in ruminant production than the female. Goats in survey sites in Mahaoya veterinary range in Eastern province were said to belong to head of family. It was clearly observed women primarily responsible for managing the goats in households whereas herding to grazing and marketing were the primary responsible of men. According to Kumar and Deoghare[6], goat farming provided a chance for efficient utilization of family labor. It was observed that among the surveyed population majority of middle aged farmers (30-45years) have involved in goat farming practices (Figure-1). The results agrees with the findings by by Fonseka *et al*.[7] in which they observed that grater part of goat farmers were between the age of 35-45 in Eastern region. The fact that the youth (18-30 years) were only 12.5% of the farmers in Mahaoya means that the goat farming industry is missing out on a more active group, who would enhance productivity and commercialization. Majority of the farmers are literate, 42.5%% have primary education while 47.5% have secondary school education. Further Homann *et al*.[8] found that the high education level in the study area is a strength in improving small ruminant farming since educated societies are willing to take risks and thus more persuaded to become involved in new technologies. None of the farmers have Degree or diploma. Most of the farmers (82.5%) are married. 42.5% farmers depend only on livestock farming and 30% on cropping as they do not have any other occupation, while the rest of the farmers are involved in some other occupations as well such as business, service, labor etc.

Table-1: Gender, Civilstatus, Familysize, Educational level of goat farmers and Experience in goat farming in Mahaoya veterinary Range.

Veterinary range	Mahaoya				
	Male		Female		
Gender	Frequency	Percentage	Frequency	Percentage	
	32	80%	8	20%	
Civil status	Single	Married	Widow/Widower	Divorced	
	0%	82.5%	12.5%	5%	
Family size	Up to 3	4-5	6-7	>7	
	17.5%	72.5%	10%	0%	
Education level	Non-schooling	Grade 1-5	Grade 6-10	O/L& A/L	Graduate/ Diploma
	10%	42.5%	35%	12.5%	0%
Experience in goat farming	< 1	1-5	5-10	>10	
	10%	52.5%	15%	22.5%	

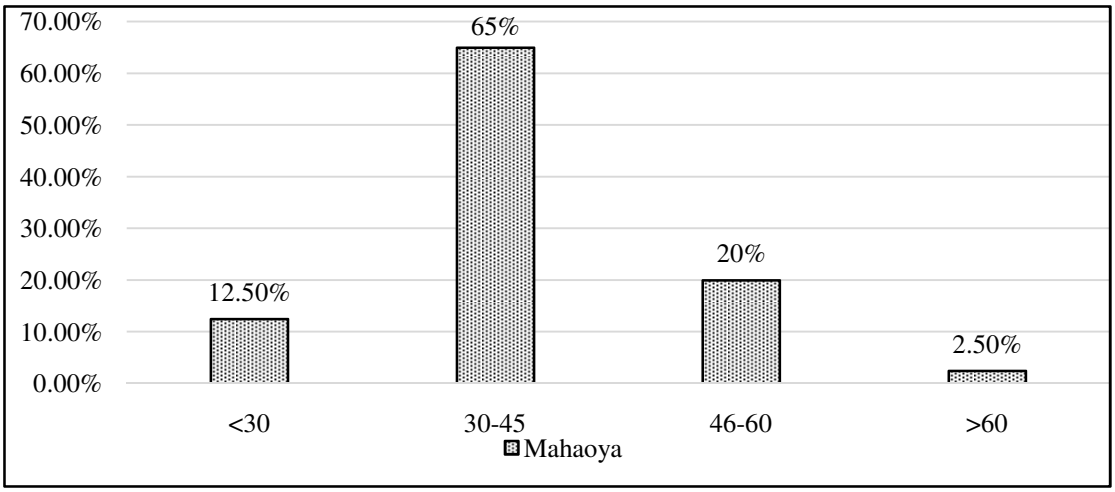

Figure-1: Age Distribution of Goat Farmers in Mahaoya Veterinary Range.

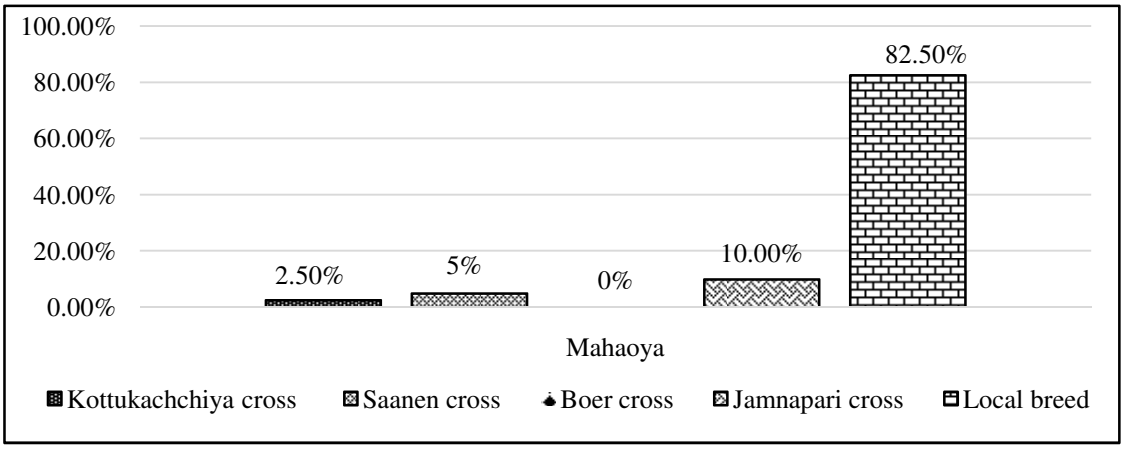

Figure-2: Distribution of Goat Breeds in Mahaoya Veterinary Range.

It was undoubtedly found that local breed was prominent in Mahaoya veterinary range due to higher productivity in dry climate condition (Figure-2). None of the Boer cross breeds were found in entire study area even though the boer breeds have great productivity. Furthermore Subalini and Lavanya[9] stated that crosses of Kottukachchiya, Saanen, Boer goat and Jamnapari were available in Eastern province.

Management and feeding strategies of Goat farming in Mahaoya veterinary range: Of the 120 households surveyed, majority of the farmers had large (>20) herds (Table-2). The most important reasons contributing for a majority of farmers keeping large herds is that, primarily farmers mainly raise goats for meat. Secondly goats considered traditionally as an 'emergency income' source. Thirdly the accessibility of extensive browsing lands, fallow paddy lands and the suitability of the climate favor the keeping of large herds.

Natural breeding method is obvious in Mahaoya veterinary range. Lack of attentiveness about Artificial Insemination and absence of improved technology facilities observed among surveyed farmers. Further it was clearly observed that heat detection, pregnancy diagnosis and breeding rest after kidding were not adopted by the entire respondent in Mahaoya. Even though the goat milk has a higher nutritive none of the farmers take milk from goats. Goat meat industry is very prime industry in Mahaoya rather than goat milk as it is most cost-effective due to fewer amounts of resources needed. It was reported that a few farmers used goat manure for their own cultivation or sold the manure to vegetable farmers to generate an additional income. A 50 kg bag of goat manure was sold for Rs.100 in the area.

It was found that depending on the size of the herd and economic status of farmers, the housing pattern of goat vary viz slatted and floor houses. The Houses were half walled or full walled or generally mud flooring was provided. Floor house was predominant in Mahaoya veterinary range due to less cost and effort in construction. Extensive system management is prominent in Mahaoya veterinary range due to higher availability of grazing land, easy management and less amount of capital. It was supported by Mamta Kumawat *et al*[1]. They reported that the farmers rear goat mainly in extensive management system using traditional management practices relying on community land for grazing and are yet ignorant of

scientific management practices. But are also stall fed to balance browsing. Hakim *et al.*[10] concluded that fractional confinement of goats with browsing followed by stall feeding on available greens proved favorable in achieving desired finishing weight and carcass quality in goats. Further it was found nearly one fourth of the goat farmers in also practiced semi intensive management system and 17.5% practiced tethering.

The feeding system was predominately fodder tree and grasses with >8 hours per day (Table-2). The proportions of respondent households who supplemented their goats with crop residue were 10%. The proportions of sampled households using fodder trees were 20%. Farmers identified the fodder trees found in public areas, forest and marginal land which are natural feed resource for goat. Further it was clearly observed that only less amout (2.5%) of farmers practiced concentrates along with fodder. Chaturvedi *et al.*[11] reported that there was need to motivate the farmers about usefulness of supplementary feeding to sheep and goats during critical stage to boost small ruminant production and to get maximum economic returns.

Table-2: Herd size, Breeding method, Purpose of rearing, Housing system, Feed source and Feeding practices (Hours) of goats in Mahaoya veterinary range.

Breeding method	Veterinary range Mahaoya			
	Natural	Artificial insemination		
	100%	0%		
Purpose of rearing	Meat	Milk	Manure	
	99%	0%	1%	
Housing system	Slatted house	Floor house		
	37.5%	62.5%		
Feeding practices (Hours)	2-4	4-6	6-8	>8
	0%	0%	47.5%	52.5%
Herd size	<10	11-20	<20	
	0%	37.5%	62.5%	

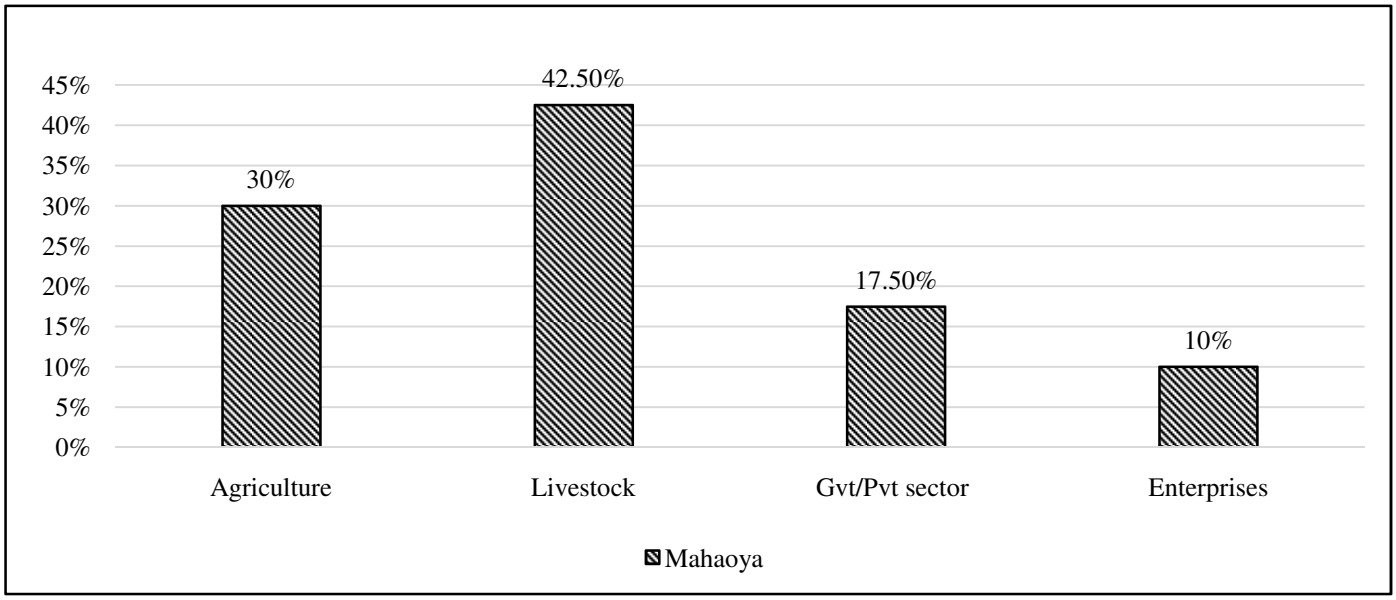

Figure-3: Occupation type of goat Farmers in Mahaoya Veterinary range.

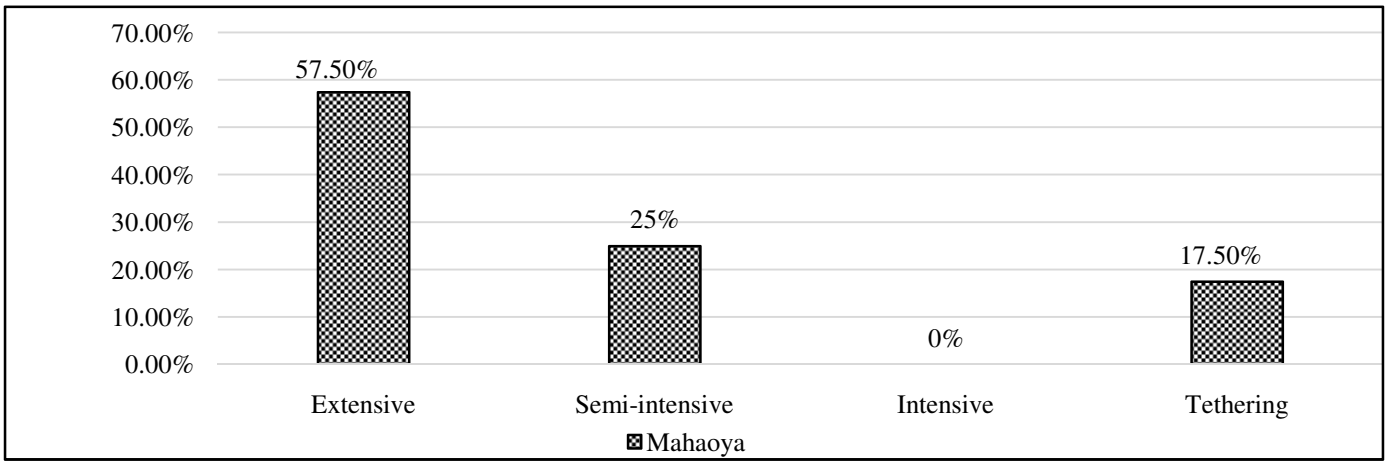

Figure-4: Adapted management system of goat farming in Mahaoya Veterinary Range.

Marketing of goat meat: It was clearly found that majority of the farmers preferred to sold goats for middle man. It may be due to long distance for market, inadequate transport and communication facilities. Furthermore farm gate price was significantly influenced by the middlemen in Mahaoya. It was indicated that middle man, who buy the goats, travel long distances. By posing low prices, middleman convey the cost to the farmers since they having the greater part of the transport cost. Furthermore, Budisatria[12] reported that, the final retailer of goat to consumer are likely to benefit more from the goat trade in consequence of the long chain trade which involves middlemen. Few farmers directly sold the goats to the slaughter house. None of the goat farmers in the study area did not consume goat meat at home. It may due to lack of preference among farmers to consuming their own goat's meat.

Table-3: Sale of goat meat in Mahaoya veterinary range.

Veterinary range	Sale of goat meat		
	Direct sale	Middle man	Home consumption
Mahaoya	9.5%	90.5%	0%

Constraints faced by Goat farmers in Mahaoya veterinary Range: Most of famers faced constraints related to disease, 27.5.5 poor fertility and breeding, 12.5% related labour management, and 5% related to feeding. Mamta Kumawat *et al.*[1] reported that lack of knowledge about balanced feeding was identified as the main constraint regarding feeding management, high cost of feeds and fodder, lack of irrigation facilities, un availability of green fodder, lack of awareness about importance of mineral mixture, and reduction in grazing land. It was clearly found that main constrains regarding breeding were inadequate availability of breeding buck and lack of knowledge about modern breeding practices. Further it was clearly indicated the major constraints respect to health care were lack of veterinary services, high cost of treatment, lack of knowledge about diseases and absence of vaccination programme. Furthermore frequency of animal deaths in Mahaoya veterinary range was 11%. It may due to low veterinary service, poor management with low attention. Following suggestions can be given in order to improve the goat farming in Mahaoya veterinary range; introduce more strategic feeding, improvement of breeding using superior breeds of goats and improvement of health care facilities and proper marketing facilities. Thus, it is important to educate the farmers on these aspects as well as scientific goat management in the study area to improve the production of goats.

Table-4: Constraints faced by Goat farmers in Mahaoya veterinary Range.

Constraints	Veterinary range Mahaoya
Diseases	37.5%
Lack of feed	5.0%
Lack of land	21.5%
Lack of labour	12.5%
Poor fertility	27.5%
Predators	1%

Conclusion

The finding shows that majority of small ruminant farmers were male and fall within the age range of 30-45 years, were married and obtained primary education respectively. The majority of the farmers practiced extensive system of management. Veterinary service was not adequate for Mahaoya veterinary range and farmers were faced constraints related to feeding, breeding, health and management. In conclusion, it revealed that the goat farming is popular among rural people as it plays a significant role in economy and nutrition of rural poor. However there is an urgent prerequisite to develop a strategy in respect of

breeding conservation and goat management in Mahaoya. The outcomes of this study will support to design programs to meet such specific needs of farmers to uplift their farming conditions.

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