

SOCIO-ECONOMIC STATUS OF THE MECHERI SHEEP FARMERS AND ECONOMICS OF REARING UNDER FARMER'S MANAGEMENT SYSTEM

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ABSTRACT

The study was made on 2309 house holds in Mecheri sheep breeding tract to collect information on socio-economic status of farmers, marketing and economics of Mecheri sheep under farmer's field condition. The average family household size of Mecheri sheep farmers was 4.33 ± 0.02 with literacy rate of 51.73 %. The percentage of farmers belonging to backward, most backward and other communities were 64.1, 29.5 and 6.40 %, respectively. The average annual family income was Rs. 19,432 \pm 202. The mean land holding size was 5.3 ± 0.23 ha, of which, the irrigated and unirrigated land constituted 33 and 67 %, respectively. The percentage of farmers with marginal, small, medium and large land holding size was 19.70, 34.95, 35.41 and 0.73, respectively. The Mecheri sheep was generally sold in the weekly markets or the traders who visited the villages periodically. The number of sheep sold per year in the flock size of 6-15, 16-25, 26-50 and above 75 was 81.8, 67.70, 52.30 and 26.50 %, respectively. The total capital investment needed for establishing a breeding stock for an average flock size of 17.6 was Rs. 34314.2 and the total recurring expenditure and the gross income obtained was Rs. 9,524.40 and 13,073.78, respectively. The study revealed that the Mecheri sheep rearing provided their owners regular income and employment opportunities. The income/sheep was marginal and the return from the animals could be improved through concerted effort to extract more benefits by improved sheep husbandry practices.

Key words: Economics, Marketing, Mecheri sheep, Socio-economic status

Sheep rearing is one of the major sources of economic sustenance for marginal farmers and landless labourers in Tamil Nadu. Tamil Nadu has eight recognized breeds of sheep with a total sheep population of 5.54 million (Census, 1998). Mecheri sheep is a recognized breed of sheep in Tamil Nadu with a population of 12,53,184 heads constituting 22.63 % of the total sheep population of the state. The sheep breed are being maintained under extensive system of rearing with minimum external inputs. Sheep rearing has importance at household level and it provides steady income throughout the year by sale of lambs, spent animals and manure. The rural households subsist on sheep rearing and substantial number of agricultural labour maintain sheep as a backyard farming to supplement their family income.

Socio-economic factors plays major role in sheep rearing practices. The flock, size and management practices followed depend on socio-economic status of the farmers. A thorough investigation of the farmer's socio-economic status is essential before suggesting any methods for

improvement in sheep rearing practices. An efficient marketing system can ensure a reasonable price to the producer and minimize unnecessary costs and margins. However, marketing of sheep is one of the most neglected areas. As a result it suffers from many drawbacks such as involvement of middlemen, unnecessary transport and exploitation of the producer and consumer. In addition, the sheep population was variable over the years on account of drought, diseases, fluctuating prices of mutton and economic factors (Lall, 1956). Taking into the consideration the above points, the present study was undertaken to identify the socio economic status, marketing and economics of Mecheri sheep rearing in its breeding tract to assess the actual economic return from sheep husbandry practices.

MATERIALS AND METHODS

Survey was made on 2309 households in 60 villages selected at random in Salem, Dharmapuri and Erode districts of Tamil Nadu from 2001- 2002. The information on house holds for its size, sex ratio,

literacy, agricultural land holding, fodder grown and annual income particulars were collected by administering a developed questioner to assess the socio economic status of the farmers. Information on marketing structure, mode of marketing and price of the animals at the time of sales was collected by questioning the owner and also by direct observation in the farmer's flocks. The total expenditure in terms of investment in purchase of animal, shed, labour and treatment and receipt from sale of animals and manure were recorded to calculate net return for analysing the economics of Mecheri sheep rearing in its breeding tract under farmer's field conditions. The collected data were scrutinized, collated and subjected to basic statistical analysis as per Snedecor and Cochran (1989).

RESULTS AND DISCUSSION

The socio economic status of the sheep farmers in three district of Mecheri sheep breeding tract is presented in Table 1. The survey in the three districts of the breeding tract revealed that the average household size of the sheep farmers was 4.33 ± 0.02 , of which 2.38 ± 0.02 were males and 1.95 ± 0.02 females. The male to female ratio among the Mecheri sheep breeders was 1000: 817 which is lower than the overall male to female ratio among the human population in Tamil Nadu, which was 1000: 986 (Census, 2001). The literacy percentage among the sheep farmers was 51.73 % indicating that only half of the sheep farmers were literate. Since, the literacy rate plays main role in adoption of new methods in the field of sheep and goat rearing, this has to be improved for early adoption of improved management practices. Kushwaha et al. (1999) reported that the average family size in Chokla sheep breeding tract in Rajasthan was 10 and the literacy rate among the family members was about 20-30 % while Geeta et al. (1999) reported that the family size of Karnataka sheep farmers as 5-7 of which 29.59 % were literate.

Table 1. Socio-economic status of the Mecheri sheep farmers in the breeding tract.

Particulars	Total
Total no. of house-holds surveyed	2309
House hold size and literacy rate	
Average no. of males	2.38 ± 0.02
Average no. of females	1.95 ± 0.02
Average no. of Literate members	2.24 ± 0.03
Community	
B.C.	1481(64.1)
M.B.C.	682(29.5)

S.C.	136 (5.9)*
S.T.	8 (0.35)
Others	2 (0.08)
Annual Income	
Below 10,000	375(16.2)
10,000 to 22,400	1193 (51.7)
Above 22,400	741 (32.1)
Number of BPL farmers (less than Rs. 22,400)	1568 (67.9)
Average Annual income	19432 ± 202

* Figures in the parentheses are the percentage in each category.

The major sheep rearing communities were Kongu vellalars of backward community and Vanniars of most backward community. The percentage of farmers belonging to backward, most backward and other communities were 64.1, 29.5 and 6.40 %, respectively.

The average annual family income was Rs. $19,432 \pm 202$, which was below poverty line. The percentage of farmers whose annual income was Rs. 10,000, 10,000 to 22, 400 and above 22,400 was 16.2, 51.7 and 32.1 %, respectively and that the percentage of farmers with annual income of less than 22,400 (below poverty line) was 67.90 %. In general, it was higher than the report of Geeta et al. (1999) that the percentage of farmers with annual income of less than 10,000 and 10,001 to 48,000 was 79.59 and 20.41 % and the mean average annual income was Rs. 18,000.00.

The classification of farmers based on agricultural land holding is presented in Table 2. In general, most of the farmers in the breeding tract were involved in agricultural and animal husbandry activities. The study revealed that the average land holding size was 5.28 ± 0.23 ha, of which, the irrigated and unirrigated land constituted 32.95 and 67.05 %, respectively. Major portion of the land holding was rain fed dependent upon monsoon hence its failure caused great impediments to their agricultural operations. In such a situation income from sheep rearing played major role for their sustenance.

The fodder grown practices were followed only in 4.2 % of the farmers and the major cultivable fodder crops were fodder cholam, Col. Co2 grasses and stylo mainly fed to cattle and buffaloes. However, in drought conditions the ewes and lambs were fed with cultivated fodders. The total number of land less-

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sheep farmers in the breeding tract accounted 9.18 % indicating that almost all the sheep farmers had land for agricultural and allied operations. Percentage of farmers with marginal, small, medium and large holding size was 19.70, 34.95, 35.41 and 0.73 %, respectively.

Geeta et al. (1999) reported that the percentage of landless farmer in Kamataka state as 82 %.

Table 2. Classification of sheep farmers based on agricultural land holding.

Districts	No. of house holds surveyed	Mean holding (acres)	Number of farmers in each category						Mean unirrigated land holding	Fodder grown (No. of farmers)
			Land-Less	Marginal <2.5	Small 2.5-5	Medium		Large >20		
						Lower (5-10)	Upper (10-20)			
Salem	877	4.27±0.15	57 (6.49)	268 (30.55)	374 (42.64)	145 (16.53)	30 (3.42)	3 (0.34)	2.37±0.08	3(0.34)
Erode	909	8.20±0.15	28 (3.08)	29 (3.19)	255 (28.05)	419 (46.09)	164 (18.04)	14 (1.54)	5.80±0.13	83(9.1)
Dharmपुरi	523	3.72±0.13	127 (24.2)	158 (30.21)	178 (34.03)	52 (9.94)	8 (1.52)	-	1.58±0.89	11 (2.1)
Total	2309	5.28±0.23	212 (9.18)	455 (19.70)	807 (34.95)	616 (26.67)	202 (8.74)	17 (0.73)	3.54±0.07	97(4.2)

Figures in the parentheses are the percentage under each category.

Marketing of live animals was unorganized involving middleman and commission agents. In villages, animals were sold to the traders who visited the villages regularly or weekly markets or sold to the butchers directly or some times to the fellow farmers for rearing. The major buyers in weekly markets were big traders and city wholesale meat dealers. Villagers and farmers also bought few sheep in the weekly market as per their requirement.

The percentage of farmers selling Mecheri sheep in weekly markets or to broker was 57.25 and 42.75 %, respectively. The weekly markets were mostly owned by local bodies, which lacked in facility of shelter, fodder and even in some place the basic need of water. The animals were mostly transported by truck, which normally carried 40- 50 sheep although over loading of animals was not uncommon.

In most of the markets trading was based on muscle thickness at loin and thigh. The traders assessed the probable meat yield based on the muscle thickness and fixed the price for each animal. The local butchers mostly slaughtered Mecheri sheep as a back yard enterprise. The meat from the dressed animals was sold to the consumers on weight basis. In general, the price of the meat was steady or in upward trend irrespective of the market price of the live animals.

The aged animals were mostly sold in the weekly markets to the traders or butchers at about 50

% of the price fetched by the young animals. The traders generally sold the aged and young lambs as a lot for disposal in the cities to the butchers. The number of sheep sold per year in the flock size of 6-15, 16-25, 26-50 and above 75 was 81.8, 67.70, 52.30 and 26.50 %, respectively. The higher percentage of sheep sold in the small flocks might be due to better care of individual animals and emergency financial needs of the farmers. In general, it was similar to the earlier report on Mecheri sheep (Arumugam et al., 1979). Few ram lambs were selected for future breeding and others were disposed of at the age of 3-12 months and almost all the ewe lambs were retained in the flocks for future breeding.

The study indicated that in the present system of marketing both the consumer and the producer were at a disadvantage and the butchers and middlemen were benefited. Hence, norms have to be fixed for pricing the animals. The farmers will be benefited if the animals are sold on live weight basis and price has to be fixed based according to the market demand. Necessary steps have to be taken to create infrastructure facilities in the weekly market for free and fair trade of Mecheri sheep. Since, the trading of Mecheri sheep has better future because of increased domestic consumption, market awareness and strengthening of facilities like modern slaughter is highly warranted.

The economics of Mecheri sheep rearing under field condition is presented in Table 3. The

study revealed that the average flock size of Mecheri sheep was 23.8, of which 1.0 ram, 16.6 ewes and 6.2 lambs. For establishing breeding flock farmers purchased Mecheri sheep at the age of 1 ½ to 2 years and kept them up to 5 to 7 years of age in the flock and they were mostly replaced with their own ewe lambs. The price of the adult animal ranged between Rs. 1500 and 2000 with an average of 1,767.00 \pm 25.07. Total investment for establishing a breeding flock of 17.60 was Rs.31,099.20

Table 3. Economics of Mecheri sheep rearing under farmer's management.

SNo.	Particulars	Amount (Rs.)
I. INVESTMENT		
A. Capital		
1.	Establishing breeding flock (16.6 ewes and 1.00 rams)	31,099.20 (150)
2.	Preparation of open pen, feeding and watering	3,125.00 (150)
3.	Total	34,314.20 (150)
B. Recurring Expenditure		
1.	Interest on capital (10%)	3,431.42(150)
2.	Expenditure towards grazing	5,708.00(2101)
3.	Expenditure towards health	385.00(2101)
4.	Total expenditure/animal/year	399.85(2101)
5.	Total expenditure for grazing/animal/year	239.63(2101)
6.	Total expenditure for health/animal/year	16.16(2101)
7.	Total recurring expenditure	9,524.40 (2101)
II Receipt		
1.	Sale of sheep (average number of animals sold in a flock/year was 14.87)	11,787.78(2101)
2.	Receipt through sale of manure	1,286.00 (150)
3.	Gross income	13,073.78
III. Net return		3,549.38
IV Average annual net return per adult sheep		201.67

The animals were housed mostly in open pens made up of bamboo stick or penned in the harvested fields. They were not giving much attention for the preparation of shed. The feed and water trough was mostly made up of mud and in some places they

were made up of cement material. The total expenditure for establishing a shed with night watchman shelter, enclosures, and lamb shelter, feeding and watering equipments was Rs.3,215.00 \pm 42.02.

The animals were reared under extensive system of management and allowed grazing for about 7-8 hrs in roadsides, harvested fields, uncultivated areas and forest areas without supplementation of concentrate. The major expenditure in grazing was labour charges. Among the households surveyed only 33 % of the farmers utilized family labour and others used hired labour for sheep rearing. The adult men labour was engaged if the flock size was more than 20. The total expenditure for grazing of Mecheri sheep was Rs.5,708 \pm 98.02. The expenditure per animal/year was Rs. 239.63. Shinde et al. (2001) reported higher rearing charges/sheep/year and ranging between Rs.394.50 to 437.73.

The major expenditure towards health was on account of deworming of animals. Deworming of animals was practiced at regular intervals and vaccination against foot and mouth disease, sheep pox and enterotoxaemia were carried out only during outbreaks. The total expenditure for health coverage of the animal in the flock/year was Rs.385 \pm 11.48. The expenditure per animal towards health coverage for an average flock size of 23.82 was Rs. 16.16/animal/year. Geeta et al. (1999) reported that the average expenditure on health coverage for flock size of 30 was Rs.230/flock/year while Shinde et al. (2001) reported that the average expenditure on prophylaxis was ranged between Rs. 13.00 and 15.00/animal/year.

The mean annual lamb and adult mortality rate observed in the flocks surveyed was 7.52 and 2.30 %, respectively. Generally there was no mortality in rams which was similar to the earlier report of Arumugam et al. (1979).

The major source of return in sheep rearing was by sale of lambs and some extent through sale of aged animals. The total receipt thorough sale of animals was Rs. 11,787.78. The average number of animals sold in a year was 14.9 with the average sale price/sheep of Rs. 792.72.

Generally the animals were penned in the harvested fields and the manure was rarely collected and sold outside. The land less farmers housed their

animals on others land and collected amount from the land owners at the rate of Rs.4.50/animal/month. The total net return through manure was Rs. 1286.00. The total gross income through sale of animals and manure was Rs.13,073.78. The net return after deducting the recurring expenditure was Rs.3,549.38. It could be seen that with an average adult flock strength of 17.60 and sheep farmers tending their sheep with hired labour could get Rs.201.27/animal/year. Shinde et al. (2001) reported that under the experimental protocol of free grazing facility, health coverage and housing of animals the overall net return ranged between Rs.399 and Rs.308/sheep/year, respectively. Geeta et al., (1999) reported that the net profit per sheep/year was Rs. 464.29 in Karnataka.

The income and expenditure particulars for different flock size of Mecheri sheep are presented in Table 4. The expenditure on grazing and health cover was directly proportional to the flock size whereas, the receipt through sale of sheep was inversely proportional to the flock size of the farmers. The income through sale of sheep was Rs. 818± 7, 812 ± 8, 794 ± 7 and 789 ±23/animal for the flock size of 6-15, 16- 25, 26- 50 and more than 50, respectively. The income on sheep sale/unit of flock size was Rs. 670.98 and 497.33 for the flock size of 6-15 and >50 animals, respectively. This is similar to the report of Prabakaran and Thirunavakkarasu (1995). This

indicated that the gross income obtained/sheep was inversely elated with the flock size, wherein, medium farmers could get less gross income per sheep than small and large flock holders: the small flock holder obtained maximum return. In general, the flock size, annual lambing rate and number of lambing per year had great influence on the net return earned from Mecheri sheep farming practices. These factors have direct relationship with the economic status of the farmers, ecological profile and managerial efficiency of the shepherds.

The study revealed that the Mecheri sheep rearing provided their owners regular income and employment opportunities. The income/sheep was marginal and the return from the animals could be improved through concerted effort to extract more benefits through improved sheep husbandry practices. Propagation of improved management practices in terms of scientific methods of feeding, selective breeding, better housing and effective health care practices is essential. Since, the farmers are mostly illiterate, periodical training has to be given for better adoption rate. The marketing structure is unorganized; hence, the existing sheep breeder's cooperative society has to be strengthened in line with dairy cooperatives so as to remove exploitation by middle men to protect the interest of the producer.

Table 4. Income and expenditure particulars of Mecheri sheep in the breeding tract.

Particulars	Flock size			
	6-15	16-25	26-50	More than 50
Average flock size	13.2	20.1	32.7	71.5
Expenditure on grazing (Rs.)	4727±120 (422)	5555±83 (991)	6406±144 (636)	8601±613 (52)
Expenditure on health (Rs.)	271±12 (422)	360±11 (991)	464±15 (636)	825±122 (52)
Expenditure on grazing per unit (Rs.)	358	276	200	114
Expenditure on health per unit (Rs.)	20.50	17.90	14.19	11.54
No. of sheep sold/year	10.8±0.2	13.6±0.2	17.1±0.3	44.8±3.0
Sale price/sheep (Rs.)	818±7	812±8	794±7	789±23
Receipt through sale of sheep (Rs.)	8857±184	10757±124	13395±211	3559±2659
Income on sheep/sale unit of flock size (Rs)	670.98	535.17	409.63	497.33

Figures in the parentheses are the number of observations under each category.

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