



Economic analysis of goat rearing in Amravati district

P.S. CHAVAN, A.S. KHOSE AND B.G. NAIR

ABSTRACT : The findings of the study reveal that the small, medium, large goat rearers and goat farms with average herd size (including below and above one year) 13.71, 21.28, 34.21, 73.30, respectively. Increase in stock at the end of the year was 14.21, 21.74, 34.55, 75.10, respectively in case of small, medium, large categories of goat rearers and goat farms. Average total receipt was observed to be Rs. 33747.48, Rs. 66726.13, Rs. 118609.42 and Rs. 217917.00. Average total cost incurred was found to be Rs. 28094.76, Rs. 41816.50, Rs. 58966.38 and Rs. 146114.50, respectively towards small, medium, large goat rearers and goat farms. The average input-output was 1:1.20, 1:1.60, 1:2.01 and 1:1.49, respectively towards small, medium, large goat rearers and goat farms.

KEY WORDS : Cost, Economics, Net income, Receipt

HOW TO CITE THIS PAPER : Chavan, P.S., Khose, A.S. and Nair, B.G. (2015). Economic analysis of goat rearing in Amravati district. *Res. J. Animal Hus. & Dairy Sci.*, 6(1) : 6-11.

INTRODUCTION

Goat is the earliest ruminant domesticated by man during hunting stage. The goat is important from the point of meat, milk, skin and fibre. Although goat is found in all the continents of the world. India possesses 15 per cent of goat population as compared to the world goat population and stands second to China. Asia and Africa accounts for 90 per cent goat population of the world. According to year 2008, goat milk, meat and skin production was 4.00, 0.50, 0.20 million MT, respectively (Deoghare, 1995).

MATERIAL AND METHODS

The study was undertaken in the Amravati district. Out of total 14 tahsils of Amravati district, four tahsils viz., Chandur Bajar, Nandgaon Khandeshwar, Daryapur, Chandur Railway were selected for the present study on

the basis of higher goat population in these tahsils. A sample of 80 traditional goat rearers was selected from the above mentioned selected tahsils of Amravati district. From these 10 goat farms were selected randomly for the present study.

Sample of total 80 goat rearers was stratified into 3 groups on the basis of mean and standard derivation: – small (0 to 15), – medium (15 to 30) and – large (30 to 45). Sample of 10 goat farms were studied separately. Simple tabular analysis is done by using income concepts and cost concepts.

RESULTS AND DISCUSSION

Average variable cost per herd in case of the selected goat rearers and goat farms (Table 1).

Hired human labour :

On an average for goat farms the value of hired human labour was worked out Rs. 327.10 i.e. 23.84 per cent of the total cost. The value of hired female labour per goat in case of goat farms was observed to be Rs. 29.32 i.e. 2.13 per cent of the total cost. Total hired human labour cost in case of goat farms was observed to be

MEMBERS OF RESEARCH FORUM

Address for correspondence :

P.S. Chavan, Department of Agricultural Economics, Shri Shivaji Agriculture College, AMRAVATI (M.S.) INDIA

Associated Authors' :

A.S. Khose and B.G. Nair, Department of Agricultural Economics, Shri Shivaji Agriculture College, AMRAVATI (M.S.) INDIA

Table 1 : Average cost of maintenance per goat rearers and per goat farms

Sr. No.	Particulars	Unit	Selected goat rearers										Per cent to total cost		
			Traditional goat rearers					Overall for all goat rearers number =80							
			Small number=14		Medium number =57		Large number =09		Avg. per herd		Avg. per goat			Per cent to total CST	
			Avg. per herd	Avg. per goat	Avg. per herd	Avg. per goat	Avg. per herd	Avg. per goat	Avg. per herd	Avg. per goat	Avg. per herd	Avg. per goat			
Variable cost															
1.	Hired human labour														
	Male labour	Rs.	-	-	-	-	-	-	-	-	-	-	24434.40	327.10	23.84
	Female labour	Rs.	-	-	-	-	-	-	-	-	-	-	2190.00	29.32	2.13
	Total	Rs.	-	-	-	-	-	-	-	-	-	-	26624.40	356.42	25.97
2.	Value of dry fodder	Rs.	5783.35	406.87	9421.80	433.44	15716.67	454.82	9493.24	434.22	22.19	29964.00	401.12	29.23	
3.	Value of green fodder.	Rs.	-	-	-	-	-	-	-	-	-	10965.00	146.78	10.71	
4.	Value of concentrate.	Rs.	396.00	27.94	515.15	23.09	965.33	27.93	544.94	24.92	1.27	2013.60	26.96	1.96	
5.	Value of medicine and vaccines	Rs.	32.57	2.29	69.12	3.17	117.78	3.41	68.2	3.12	0.16	328.20	4.39	0.32	
6.	Grazing charges per annum.	Rs.	10825.71	761.60	18206.77	837.59	21908.89	634.00	18581.58	850.41	43.45	-	-	-	
7.	Electricity bill	Rs.	152.5	10.73	205.88	9.47	222.22	6.43	198.37	9.07	0.46	310.00	4.15	0.30	
8.	Veterinary aid expenditure	Rs.	128.57	9.05	94.38	4.34	61.11	1.77	96.62	4.42	0.23	270.00	3.61	0.26	
9.	Miscellaneous expenditure	Rs.	63.57	4.47	108.42	4.98	134.44	3.89	103.5	4.74	0.24	272.50	3.65	0.27	
10.	Interest on working capital @ 12% (for 6 month)	Rs.	1441.16	80.28	1761.24	79.61	2504.05	72.46	1793.84	82.10	4.20	4595.15	62.15	4.53	
	Total variable cost	Rs.	18223.43	1303.23	30382.76	1395.69	41630.58	1204.70	30880.29	1413	72.20	75342.85	1009.23	73.55	
11.	Imputed interest on fixed capital as on 1.4.2011 @ 10 %	Rs.	4529.94	330.31	6682.00	313.99	10920.78	319.11	6782.22	316.74	16.19	21335.74	291.07	21.21	
12.	Municipal / grampanchayat taxes on cattle shed	Rs.	71.78	5.05	118.58	5.45	142.78	4.13	113.11	5.18	0.26	152.2	2.04	0.15	
13.	Depreciation on cattle shed / equipment	Rs.	107.11	10.24	150.71	8.32	188.91	5.84	147.38	8.07	0.41	583.68	4.72	0.34	
14.	Value of family labour														
	Male labour	Rs.	2737.50	192.58	2689.47	123.73	3650.00	43.97	2805.93	128.41	6.56	31200	41.77	3.04	
	Female labour	Rs.	1825	128.40	1792.98	82.48	2433.33	70.41	1871.25	85.64	4.38	17500	23.43	1.71	
	Total	Rs.	4562.5	320.98	4482.45	206.21	6083.33	144.38	4677.18	214.05	10.94	48700	65.2	4.75	
	Total fixed cost	Rs.	9271.33	666.58	11433.74	533.97	17335.80	443.46	11719.89	544.04	27.80	70771.62	363.03	26.45	
	Total cost (v.c+f.c)	Rs.	28094.76	1969.81	41816.50	1929.66	58966.38	1648.17	42600.18	1957.04	100.00	146114.50	1372.26	100.00	

N.B.- Average value of input used per goat and their cost are workout on the basis of stock of goats available at the end of the year i.e. on 31.3.2012

25.97 per cent of total cost (Table 3).

Dry fodder :

Contribution of dry fodder was observed to be Rs. 5783.35, Rs. 9421.80, Rs. 15716.67 and Rs. 9493.24, respectively in case of small, medium, large and overall categories of goat rearers. In case of goat farm the cost of dry fodder has accounted Rs. 29964.00 *i.e.* 29.23 per cent of the total cost.

Green fodder :

In case of goat farms the cost of green fodder has accounted to be Rs. 10965 *i.e.* 10.71 per cent of the total cost.

Concentrate feed :

Average cost of concentrate feed was observed to be Rs. 396.00, Rs. 515.15, Rs. 965.33, Rs. 544.94 and Rs. 2013.60, respectively in case of the small, medium, large, overall categories of goat rearers and goat farms.

Medicine and vaccines :

Average value of medicine and vaccines per goat was observed to be Rs. 32.57, Rs. 69.12, Rs. 117.78 and Rs. 68.20, respectively in case of the small, medium, large and overall categories of goat rearers. In case of goat farm it has accounted to be Rs. 328.20.

Grazing charges :

The average grazing charges per goat was observed to be Rs. 761.60, Rs. 837.59, Rs. 634.00 and Rs. 850.41 in case of the small, medium, large and overall categories of goat rearers, respectively.

Electricity expenditure :

Average electricity expenditure per herd was observed to be Rs. 152.50, Rs. 205.88, Rs. 222.22 and Rs. 198.37 in case of the small, medium, large and overall categories of goat rearers. In case of goat farms the average expenditure on electricity per farm was observed to be Rs. 310.00.

Veterinary aid expenditure :

Average veterinary aid expenditure per herd was observed to be Rs. 128.57, Rs. 94.38, Rs. 61.11 and Rs. 96.62, respectively in case of the small, medium, large

overall categories of the goat rearers. In case of goat farms the average veterinary aid expenditure per farm was observed to be Rs. 270.00.

Miscellaneous expenditure :

Average miscellaneous expenditure per herd was worked out Rs. 63.57, Rs. 108.42, Rs. 134.44 and Rs. 103.50, respectively in case of the small, medium, large and overall categories of goat rearers. In case of the goat farm owners the miscellaneous expenditure average per farm was observed to be Rs. 272.50.

Interest on working capital :

Average interest on working capital per herd was worked out to Rs. 1441.16, Rs. 1761.24, Rs. 2504.05 and Rs. 1793.84, respectively in case of the small, medium, large and overall categories of goat rearers. In case of goat farms the average expenditure of interest on working capital per farm was worked out to Rs. 4595.15.

Total variable cost :

The average total variable cost per herd was worked out Rs. 18223.43, Rs.30382.76, Rs. 41630.58 and Rs. 30880.29, respectively in case of the small, medium, large and overall categories of goat rearers. In case of goat farms the average variable cost per farm was worked out to Rs. 75342.85.

Average fixed cost in case of the selected goat rearers and goat farms per herd (Table 1).

Imputed interest on fixed capital :

Average per herd imputed interest on fixed capital as on 1.4.2011 @ of 10 per cent were worked out to Rs. 4529.94, Rs. 6682.00, Rs. 10920.78 and Rs. 6782.22, respectively in case of the small, medium, large and overall categories of goat rearers. In case of goat farms average per farm imputed interest on fixed capital worked out to Rs. 291.07.

Municipal and Grampanchayat taxes :

Average per herd municipal / Grampanchayat taxes was worked out Rs.71.78, Rs. 118.58, Rs. 142.78 and Rs. 113.11, respectively in case of small, medium, large and overall categories of goat rearers. In case of goat farms average per herd municipal / Grampanchayat taxes were Rs. 152.20.

Table 2 : Receipts from goat rearing towards selected goat rearers and goat farms during 2011-2012

Sr. No.	Particulars	Unit	Selected goat rearers										Per cent to total receipt
			Traditional goat rearers					Goat farms number =10					
			Small number =14	Medium number =57	Large number =09	Overall for all goat rearers number =80	Avg. per herd	Avg. per goat	Avg. per herd	Avg. per goat	Avg. per herd	Avg. per goat	
1.	Value of milk utilized for home consumption	Rs.	1937.14	2326.84	109.34	2366.67	69.15	2263.12	105.69	3.39	2310.00	31.51	0.83
2.	Receipt from sale of goats.												
	Value of male goat sold	Rs.	400	294.73	13.85	-	-	280	13.07	0.42	-	-	-
	Value of female goat	Rs.	1571.42	114.58	1250.88	600	17.53	9096.25	57.61	1.85	3840.00	52.39	1.39
	Value of male kids	Rs.	17164.29	1251.56	30543.86	1435.28	57572.22	1682.30	31243.13	46.78	100795.00	1375.10	36.47
	Value of female kids.	Rs.	8635.71	629.68	25112.28	1180.05	49361.11	1442.37	24956.87	37.36	87780.00	1997.54	52.97
	Total	Rs.	27771.42	2024.98	57201.75	2687.96	107533.30	3142.20	57713.75	2695.31	192415.00	2625.03	69.61
3.	Increase value of goats herd as on 31.3.2012 over 1.4.2011.	Rs.	2841.43	207.18	5137.81	241.43	4617.22	134.92	4677.39	218.44	16463.00	220.39	5.84
4.	Value of goat manure	Rs.	1173.21	85.55	2004.82	94.20	3988.90	116.56	2082.50	97.25	6472.00	88.29	2.34
5.	Miscellaneous receipt.	Rs.	24.28	1.77	54.91	2.58	103.33	3.02	55.00	2.57	259.00	5.53	0.15
	Total receipt	Rs.	33747.48	2460.73	66726.13	3135.51	118609.42	3465.85	66791.76	3119.26	217917.00	3770.75	100.00

Table 3 : Net income from goat rearing and input-output ratio in case of the selected goat rearers and goat farms during 2011- 2012

Sr. No.	Particulars	Unit	Selected goat rearers										Goat farms number =10
			Traditional goat rearers					Overall for all goat rearers number =80					
			Small number =14	Medium number =57	Large number =09	Overall for all goat rearers number =80	Avg. per herd	Avg. per goat	Avg. per herd	Avg. per goat	Avg. per herd	Avg. per goat	
1.	Total receipts	Rs.	33747.48	2460.73	66726.13	3135.51	118609.42	3465.85	66791.76	3119.26	217917.00	3770.75	
2.	Variable cost	Rs.	18223.43	1303.23	30382.76	1395.69	41630.58	1204.70	30880.29	1413	75342.85	1009.23	
3.	Total cost	Rs.	28094.76	1969.81	41816.50	1929.66	58966.38	1648.17	42600.18	1957.04	146114.50	1372.26	
4.	Net income at variable cost. (1-2)	Rs.	15524.05	1157.50	36343.37	1739.82	76978.84	2261.15	35911.47	1706.26	142574.15	2761.52	
5.	Net income at total cost. (1-3)	Rs.	5652.72	490.92	24909.63	1205.85	59643.04	1817.68	24191.58	1162.22	71802.50	2398.49	
6.	Input-output ratio at variable cost (1/2)	Rs.	1.85	1.89	2.19	2.25	2.85	2.88	2.16	2.21	2.89	3.74	
7.	Input-output ratio at total cost. (1/3)	Rs.	1.20	1.25	1.60	1.62	2.01	2.10	1.57	1.59	1.49	2.75	

Depreciation on cattle shed, tools and other fixed capital items :

Average value of depreciation on tools and cattle shed were worked out to per herd was Rs. 107.11, Rs. 150.71, Rs. 188.91, Rs. 147.38, respectively in case of the small, medium, large and overall categories of the goat rearers. In case of goat farms it was Rs. 583.68.

Total fixed cost :

Average total fixed cost worked out per herd was Rs. 9271.33, Rs. 11433.74, Rs. 17335.80 and Rs. 11719.89, respectively in case of the small, medium, large and overall categories of the goat rearers. In case of goat farms average total fixed cost work out per farm was Rs. 70771.62.

Receipts from goat rearing in case of selected goat rearers and goat farms during 2011-2012 (Table 2).

Value of milk utilized for home consumption :

Contribution of receipt was observed to be Rs. 2263.12 and Rs. 2310.00, respectively in case of overall categories of goat rearers and goat farms.

Receipts from sale of male goats :

The average receipt was observed to be Rs. 280 in case of overall goat rearers.

Receipts from sale of female goats :

The value of female goats sold was observed to be Rs. 1233.75, Rs. 3840.00 average per herd, respectively in case of overall categories and goat farms.

Receipts from sale of kids :

Average per herd receipts from sale of male kid goats were Rs. 56200.00, Rs. 188575.00, respectively in case of the overall categories and goat farms.

Receipt from the sale of total goats :

Average per herd receipts from sale of total goats were Rs. 57713.75, Rs. 192415.10, respectively in case of the overall categories and goat farms.

Receipts from goat manure :

The average value of manure per herd was observed to be Rs. 2082.50, Rs. 6472.00, respectively in case of the overall categories and goat farms.

Miscellaneous receipt :

The average value of miscellaneous receipt per herd was observed to be Rs. 55.00, Rs. 259.00, respectively in case of the overall categories and goat farms.

Total receipts :

Average total receipt per herd was observed to be Rs. 66791.76, Rs. 217917.00, respectively in case of the overall categories and goat farms.

Net income from goat rearing and input-output ratio in case of the goat rearers and goat farms (Table 3).

Table 3 presents net income from goat rearing and input-output ratio in case of the goat rearers and goat farm during 2011-2012.

It could be observed from the Table 3 that, the net income at variable cost average per herd was Rs. 15524.05, Rs. 36343.37, Rs. 76412.75, Rs. 35911.47, Rs. 142574.15, respectively in case of the small, medium, large, overall categories and goat farms. From above it could be seen that traditional goat rearers are rearing goat as a supplementary enterprise to augment the family income. Further, it could be observed that for average per goat above one year balance at the end of year the income at variable cost was Rs. 1157.50, Rs. 1739.82, Rs. 2261.15, Rs. 1706.26, Rs. 2761.52, respectively in case of the small, medium, large, overall categories and goat farms.

Average per goat herd net income at total cost was worked out to Rs. 5652.72, Rs. 24909.63, Rs. 59643.04, Rs. 24191.58, Rs. 71802.50, respectively in case of the small, medium, large, overall categories and goat farms. Average net income at total cost per goat was worked out to Rs. 490.92, Rs. 1205.85, Rs. 1817.68, Rs. 1162.22, Rs. 2398.49, respectively in case of the small, medium, large, overall categories and goat farm.

Conclusion:

In case of goat rearers the goat rearing was a subsidiary occupation as its provided average net income per goat rearers at total cost of Rs. 24191.58. But in case of goat farm owners it was a main occupation and provided net income of Rs. 71802.50 after considering the total cost. In case of goat rearers, average net income per goat at total cost was higher *i.e.* Rs. 1817.68 in case of large category than medium (Rs. 1205.85) and small (Rs. 490.92) category. In case of goat farm average net income per goat at total cost

was found to be Rs. 2398.49 which was higher than all the three categories of goat rearers. Income from goat rearing increases with the increase in size of the goat herd and as such the goat rearers and goat farm owners can increase their net income by increasing goat herd size. The input-output ratio at total cost was observed to be 1:1.57 for the overall goat rearers and it was 1:1.49 in case of goat farms. Similar work related to the present work was also done by Babar *et al.* (2001); Jitender *et al.* (2005); Prabu *et al.* (2009) and Shinde *et al.* (2003).

LITERATURE CITED

Babar, V.S., Killedar, N.S., Toradmal and Lohar, N.S. (2001). Economics of stall feeding of goats in Western Maharashtra: A

case study. *Indian Dairy.*, **53**(2) : 33-34.

Deoghare, P.R. (1995). Factors contributing to milk yield and cost of goat milk production in Etawah district of Uttar Pradesh. *Indian J. Anim. Sci.*, **65**(9) : 1031-1034.

Jitender, B., Pandey, U.K. and Suhag, K.S. (2005). Small ruminants economy of semi-arid region in Hariyana. *Indian J. Agric. Econ.*, **60**(2) : 163-183.

Prabu, M., Selvakumar, K.N., Pandian, A. Serma Saravana, Kumar, G. Senthil and Meganathan, N. (2009). Profitability analysis of goat farming in Tamil Nadu. *Indian J. Anim. Res.*, **45**(1) : 32-37.

Shinde, A.K., Bhatta, Raghavendra, Sankhyan, S.K., Singh, N.P. and Verma, D.L. (2003). Economics of goat rearing in an organized farm. *Indian J. Small Rumin.*, **9**(1) : 32-34.

Received : 23.08.2014; Revised: 04.04.2015; Accepted : 02.05.2015