

Research Article

# Capital investment pattern of different herd size of goat rearing in Amravati district

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**SUMMARY :** 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) were 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 cost incurred was found to be Rs. 28094.76, Rs. 41816.50, Rs. 58966.38 and Rs. 146114.10, respectively towards small, medium, large goat rearers and goat farms. The average capital investment was Rs. 45299.38, Rs. 66820.02, Rs. 109207.81, Rs. 67822.24, Rs. 213357.40, respectively towards small, medium, large, overall goat rearers and goat farms.

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## BACKGROUND AND OBJECTIVES

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).

## RESOURCES AND METHODS

The study was undertaken in the Amravati district. Out of total 14 tahsils of Amravati district, four tahsils viz., i) Chandur Bajar ii) Nandgaon Khandeshwar iii) Daryapur iv) 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. i) Small (0 to 15) ii) Medium (15 to 30) and iii) Large (30 to 45). Sample of 10 goat farms were studied separately.

Simple tabular investment is shown by using capital concepts and cost concepts.

## OBSERVATIONS AND ANALYSIS

The results of the present study as well as relevant discussions have been presented under following sub heads:

### **Fixed capital assets in case of the selected goat rearers and goat farms as on 1.4.2011 and 31.3.2012 :**

It could be observed from the Table 1 that, in all the categories of selected goat rearers *i.e.* small, medium and large there is an increase in the fixed capital assets at the end of the year *i.e.* on 31.3.2012 over beginning of the year *i.e.*

**KEY WORDS :**

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1.4.2011. Increase was mainly due to increase in the goat herd size at the end of year over the beginning of the year and also due to the increase in the market prices of goats at the end of year as compared to the beginning of the year.

This increase in the value of goat herd at the end of year has compensated the depreciation on tools and cattle shed and has also shown a net increase in the fixed capital asset at the end of year *i.e.* 31.3.2012 over beginning of the year *i.e.* 1.4.2011. Average per goat rearer total fixed capital assets on 1.4.2011 were Rs. 45299.38, Rs. 66820.02, Rs. 109207.81, respectively in case of small, medium and large categories of the goat rearers. On an average for the total goat rearers the average fixed capital assets per goat rearers as on 1.4.2011 was Rs.67822.24. Average fixed capital assets per goat farms as on 1.4.2011 was Rs. 213357.4.

The average fixed capital assets per goat rearers on 31.3.2012 was Rs.46065, Rs. 68720.54, Rs. 111633.71 and Rs.69546.52, respectively in case of the small, medium, large and overall categories of goat rearers. In case of goat farms the average fixed capital investment per goat farm as on 31.3.2012 was Rs. 221583.42. Average fixed capital investment per goat as on 1.4.2011 and also for 31.3.2012 was also worked out and it was calculated on the basis of

average herd size on 1.4.2011 and 31.3.2012.

#### Depreciation on fixed capital items *viz.*, tools and cattle shed during 2011-2012 :

It could be observed from Table 2 that there was a depreciation on fixed capital items *i.e.* tools and cattle shed during 2011-2012 in case of all the categories of goat rearers and the goat farms. The average value of depreciation per goat rearers on tools and cattle shed at the beginning of the year *i.e.* 1.4.2011 and also at the end of year *i.e.* 31.3.2012 was higher in large category of goat rearers than the goat rearers of small category.

The average depreciation per goat rearers on tools and cattle shed as on 31.3.2012 was observed to be Rs. 949.30, Rs. 1253.59 Rs. 1820.90 Rs.1264.16, respectively in case of small, medium, large and overall categories of goat rearers. In case of goat farms it was observed to be Rs. 3039.48 for average per goat farms under study. The average per goat rearers depreciation on fixed capital assets *viz.*, (tools+ cattle shed) was observed to be Rs. 107.11, Rs.150.71, Rs. 188.91 and Rs. 147.38, respectively in case of small, medium, large and overall categories of goat rearers during 2011-2012. For total goat rearers the average per goat depreciation on tools and cattle shed during 2011-2012 was observed to be Rs. 8.07 and it was Rs. 4.72 in case of per

**Table 1 : Fixed assets position in case of the selected goat rearers and goat farms, as on 1.4.2011 and 31.3.2012**

Sr. No	Particulars	Unit	Selected goat rearers								Goat farms (No=10)	
			Traditional goat rearers						Overall for all goat rearers (No=80)		Avg. per herd	Avg. per goat
			Small (No=14)		Medium (No=57)		Large (No=09)		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	Avg. per herd			Avg. per goat	
<b>Goat herd size</b>												
a.	1.4.2011	No	13.71	-	21.28	-	34.21	-	21.40	-	73.30	-
b.	31.3.2012	No	14.21	-	21.74	-	34.55	-	21.86	-	75.10	-
<b>Fixed capital</b>												
<b>1. Goats</b>												
a.	1.4.2011	Rs.	30467.14	2221.56	47373.86	2226.14	80232.22	2344.44	48111.75	2246.90	157426.00	2147.69
b.	31.3.2012	Rs.	32253.57	2269.09	50625.61	2329.02	84677.78	2450.48	51203.88	2343.42	169221.50	2266.28
<b>2. Tools</b>												
a.	1.4.2011	Rs.	921.45	67.19	1293.74	60.79	4842.70	141.50	1627.85	76.02	9828.40	134.08
b.	31.3.2012	Rs.	735.86	51.77	1032.14	47.51	4271.49	123.61	1345.15	61.56	8955.62	119.89
<b>3. Cattle shed</b>												
a.	1.4.2011	Rs.	13910.79	1014.32	18152.42	852.99	24132.89	705.18	18082.94	844.50	46103.00	628.96
b.	31.3.2012	Rs.	13075.71	919.89	17062.79	784.97	22684.44	656.46	16997.49	777.91	43336.30	580.13
<b>Total fixed capital</b>												
a.	1.4.2011	Rs.	45299.38	3303.07	66820.02	3139.92	109207.81	3191.12	67822.24	3167.42	213357.40	2910.73
b.	31.3.2012	Rs.	46065	3240.75	68720.54	3661.5	111633.71	3230.55	69546.52	3182.89	221583.42	2966.30

Increase in value of goats on 31.3.2012 is due to increase in the average size of goat herd and also due to the increase in average market price of goat over 1.4.2011, N.B- Average per goat is worked out on the basis of total goat herd strength as on 1.4.2011 and 31.3.2012.

goat farms under study. Average value of fixed capital assets per goat is also worked out for 1.4.2011 and also for 31.3.2012 on the basis of total herd size strength as on 1.4.2011 and 31.3.2012.

#### Average variable cost per herd in case of the selected goat rearers and goat farms :

##### Hired human labour (Table 3):

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 25.97 per cent of total cost.

##### 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. 152.5, Rs. 205.88, Rs. 222.22, and Rs. 198.37 in case of the small, medium, large and overall categories of goat rearers, respectively. 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

**Table 2: Depreciation on fixed capital items viz., tools and cattle shed during 2011-2012**

Sr. No	Particulars	Unit	Selected goat rearers									
			Traditional goat rearers								Goat farms (No=10)	
			Small (No=14)		Medium (No=57)		Large (No=09)		Overall for all goat rearers (No=80)		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	Avg. per herd	Avg. per goat	
A.	Tools and cattle shed as on 1.4.2011											
a.	Tools	Rs.	222.34	16.21	310.41	14.58	562.24	16.24	323.33	15.10	857.36	11.69
b.	Cattle shed	Rs.	834.07	60.81	1093.89	51.40	1447.57	42.29	1088.21	50.82	2765.80	37.73
	Total value of tools and cattle shed as on 1.4.2011	Rs.	1056.41	77.02	1404.3	65.98	2009.81	58.53	1411.54	65.92	3623.16	49.42
B.	Tools and cattle shed as on 1.4.2012											
a.	Tools	Rs.	165.37	11.63	230.35	10.59	460.35	13.32	244.85	11.20	739.78	9.90
b.	Cattle shed	Rs.	783.93	55.15	1023.24	47.02	1360.55	39.37	1019.31	46.65	2299.70	34.80
	Total value of tools and cattle shed as on 1.3.2012	Rs.	949.30	66.78	1253.59	57.66	1820.9	52.69	1264.16	57.85	3039.48	44.7
	Depreciation on tools and cattle shed during 2011-2012 (A-B)	Rs.	107.11	10.24	150.71	8.32	188.91	5.84	147.38	8.07	583.68	4.72

Table 3 : 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			Goat farms (No=10)							
			Small (No=14)	Medium (No=57)	Large (No=09)	Overall for all goat rearers (No=80)	Avg. Per herd	Avg. Per goat		Per cent total cost	Avg. Per herd	Avg. Per goat	
A.	Variable cost												
1.	Hired human labour												
i.	male labour	Rs.	-	-	-	-	-	-	24434.40	327.10	23.84		
ii.	female labour	Rs.	-	-	-	-	-	-	21900.00	29.32	2.13		
	Total	Rs.	-	-	-	-	-	-	26624.40	356.42	25.97		
2.	Value of dry fodder	Rs.	5783.35	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	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	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	-	-	-
10.	Electricity bill.	Rs.	152.5	10.73	205.88	9.47	222.22	6.43	198.37	9.07	310.00	4.15	0.30
12.	Veterinary aid expenditure.	Rs.	128.57	9.05	94.38	4.34	61.11	1.77	95.62	4.42	270.00	3.61	0.26
15.	Miscellaneous expenditure.	Rs.	63.57	4.47	108.42	4.98	134.44	3.89	103.5	4.74	272.50	3.65	0.27
16.	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	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	75342.85	1009.23	73.55
17.	Imputed interest on fixed capital as on 1.4.2011 @ 10%	Rs.	4529.94	330.31	6682.00	313.99	10920.78	319.1	6782.22	316.74	21335.74	291.07	21.21
19.	Municipal / Gram Panchayat taxes on cattle shed.	Rs.	7.78	5.05	118.58	5.45	142.78	4.13	113.11	5.18	152.2	2.04	0.15
21.	Depreciation on cattle shed / equipment.	Rs.	107.11	10.24	150.71	8.32	188.91	5.84	147.38	8.07	583.58	4.72	0.34
22.	Value of family labour												
i.	male labour.	Rs.	2737.50	192.58	2689.47	123.73	3650.00	43.97	2805.93	128.41	31200	41.77	3.04
ii.	female labour.	Rs.	1825	128.40	1792.98	82.48	2433.33	70.41	1871.25	85.64	17500	23.43	1.71
	Total	Rs.	4562.5	320.98	4482.45	206.21	6083.33	144.38	4677.18	214.05	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	70771.62	363.03	26.45
	Total cost (V.C+F.C)	Rs.	28094.76	1969.81	41816.50	1929.65	58966.38	1548.17	42600.18	1957.04	146114.50	1372.26	100.00

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

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 to 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 3):**

##### *Imputed interest on fixed capital :*

Average per herd imputed interest on fixed capital was on 1.4.2011 @ of 10 per cent was 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 was worked out to Rs. 291.07.

##### *Municipal and Gram Panchayat taxes :*

Average per herd municipal / Gram Panchayat 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 / Gram Panchayat taxes were Rs. 152.20.

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

Average value of depreciation on tools and cattle shed were worked out per herd was Rs. 107.11, Rs. 150.71, Rs. 188.91 and 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.

##### *Total cost:*

Average total cost were worked out per herd was Rs. 28094.76, Rs. 41816.50, Rs.58966.38 and Rs. 42600.18, respectively in case of the small, medium, large and overall categories of goat rearers. In case of goat farms the average total cost worked out per goat was Rs. 146114.50.

##### *Value of family labour :*

Average imputed value of total family labour (male and female) were worked out per herd was Rs. 4562.5, Rs. 4482.45, Rs. 6083.33 and Rs. 4677.18, respectively in case of the small, medium, large and overall categories of goat rearers. In case of goat rearers it was Rs. 48700.

#### **Conclusion:**

In case of goat rearers the goat rearing was a subsidiary occupation as it provided average net income per goat rearers at total cost of Rs. 25295.69. But in case of goat farm owners it was a main occupation and provided net income of Rs. 71802.90 after considering the total cost. The average capital investment was Rs. 45299.38, Rs. 66820.02, Rs. 109207.81, Rs. 67822.24, Rs. 213357.40, respectively towards small, medium, large, overall goat rearers and goat farms.

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