

A Study on Cost and Returns in Milk Production in case of Weaker Section Farmers

SANJEEV KAUSHAL

Deptt. of Agril. Economics, Sarvodaya Mahavidhyalaya Chaumuhan Mathura (U.P)

Corresponding address: kaushalagra@gmail.com

Abstract

The present study covered two blocks viz Bah & Bichpuri blocks of Agra district and 4 villages in each block selected randomly. The number of cases were 150 (75 in each block). The list of small and marginal farmers for 8 villages having milch animals for milk production was prepared. The cases of small and marginal farmers were further divided in different herd size groups. The study shows that the farm business income in different herd size group was significantly more. Thus dairying can be recommended for increasing the income of weaker sections farms as they have small area of land and ample amount of labour.

Key words: Gross Income, Net Income, Farm Business Income

Introduction

In India dairy business is one of the important occupation which is commonly found both in semi urban as well as in rural areas. The economy of India is mainly based on raising of crops with maintenance of livestock for milk production. Thus the knowledge of cost and returns in milk production is essential to the producers of milk, planner as well as government for making policies for encouraging the dairy business. Thus the present study of cost and returns in milk production in case of small and marginal farmers was conducted.

Methodology

The present study was conducted in two blocks viz Bah and Bichpuri of Agra district and eight villages were covered (4 villages in each block). The total number of cases under study was 150 (75 small and 75 marginal). The small farmers and marginal farmers were classified into three herd size groups viz I herd size farmers (having one milch animal) II herd size (having two milch animals), and III herd size (three and more milch animals). The number of cases falling in I, II and III herd size groups were 35, 25 and 15 respectively in small farm size group. The number of cases falling in I, II and III herd size groups were 45, 20 and 10 respectively in marginal farm size group. The data were collected by personal interviews method from the selected farmers.

Results and discussion

Maintenance cost of milch animals

The economy of dairy enterprise depends up on the cost incurred in maintaining milch animals. The cost of maintenance includes the fixed cost and as well as variable cost as shown below.

The table 1 indicates that the overall average fixed cost per family in case of small farmers came to Rs. 14119.62. The per family depreciation on animal value was found to be Rs. 3866.05. Whereas the interest on the same was Rs. 3479.45. The depreciation and interest on the value of cattle shed came to Rs. 1493.81 and Rs. 4481.43 respectively. While the depreciation on chaff cutter and other equipments was Rs. 125.39 and interest came to Rs. 112.85. The repair charges on cattle shed and chaff cutter & others came to Rs. 497.94 and Rs. 62.70 respectively. The table further reveals that in case of marginal farmers, the per family overall fixed cost worked out to be Rs. 11935.49. The per family depreciation on animal value was found to be Rs. 3030.05 whereas, the interest on the same was Rs. 2727.05. The depreciation and interest on the value of cattle shed came to Rs. 1374.86 and Rs. 4124.59 respectively. While the depreciation on chaff cutter & others equipments were Rs. 91.94 and interest came to Rs. 82.74. The repair charges on cattle shed and chaff cutter and other equipment came

Table 1: Fixed cost per family in different herd size of groups of small farmers and marginal farmers (In Rs.)

Herd Size	Animals		Cattle shed			Chaff cutter and other equipments			Total Fixed cost
	Depreciation	Interest	Depreciation	Repair	Interest	Depreciation	Repair	Interest	
Small Farmers									
I	1950(21.23)	1755.05(19.11)	1216.51(13.25)	405.50(04.42)	3649.52(39.74)	86.62(00.94)	43.31(00.47)	77.96(00.85)	9184.52(100)
II	3906.06(27.20)	3515.45(24.48)	1514.41(10.55)	504.80(03.52)	4543.23(31.64)	155.91(01.09)	77.96(00.54)	140.32(00.98)	14358.14(100)
Over all	3866.05(27.38)	3479.45(24.64)	1493.81(10.58)	497.94(03.53)	4481.43(31.74)	125.39(00.89)	62.70(00.44)	112.85(00.80)	14119.62(100)
Marginal Farmers									
I	1850.04(20.93)	1665.04(18.84)	1186.82(13.43)	395.61(04.48)	3560.45(40.29)	75.00(00.85)	37.50(00.42)	67.50(00.76)	8837.96(100)
II	3800.06(28.33)	3420.05(25.50)	1370.27(10.22)	456.76(03.41)	4110.80(30.65)	106.65(00.80)	53.33(00.40)	95.99(00.72)	13413.91(100)
Over all	3030.05(25.39)	2727.05(22.85)	1374.86(11.52)	458.29(03.84)	4124.59(34.56)	91.94(00.77)	45.97(00.39)	82.74(00.69)	11935.49(100)

(Figures in parenthesis indicate percentage)

Table 2: Variable cost per family in different herd size groups of small farmers and marginal farmers (In Rs.)

Herd size	Fodder		Concentrate	Human labour	Salt, medicine and ropes	Total variable cost
	Green	Dry				
Small farmers						
I	2335.14 (17.19)	4016.57 (29.58)	4757.58 (35.03)	1918.40 (14.13)	552.79 (04.07)	13580.48 (100)
II	4943.36 (17.47)	8192.46 (28.95)	9590.07 (33.89)	4125.89 (14.58)	1449.44 (05.12)	28301.22 (100)
III	9752.47 (17.88)	14446.50 (26.49)	18242.26 (33.45)	9083.35 (16.66)	3008.16 (05.52)	54532.74 (100)
Overall	4679.75 (17.67)	7481.32 (28.24)	8666.35 (32.72)	4080.00 (15.40)	1580.00 (05.97)	26487.43 (100)
Marginal farmers						
I	2187.08 (17.15)	3620.36 (28.39)	4554.25 (35.72)	1941.79 (15.23)	446.91 (03.51)	12750.39 (100)
II	4666.60 (17.35)	7184.42 (26.71)	9423.82 (35.03)	4398.74 (16.35)	1227.38 (04.56)	26900.96 (100)
III	8351.74 (18.53)	11137.63 (24.71)	15176.83 (33.67)	7990.72 (17.73)	2422.33 (05.37)	45079.25 (100)
Overall	3662.46 (17.62)	5561.27 (26.75)	7253.75 (34.69)	3396.30 (16.34)	916.49 (04.41)	20790.27 (100)

(Figures in parenthesis indicate percentage)

to Rs. 458.29 and Rs. 45.97 respectively. It can be concluded from the table that the fixed cost per family was more in all categories of small farmers as compared to marginal farmers. It may be mainly due to better quality of animals kept by the small farmers.

Variable cost per family

The variable cost includes the cost of concentrates, green and dry fodders, Human labour, salt and medicine etc. as shown by the table 2.

The table 2 reveals that the overall average variable cost in case of small farmers came to Rs. 26487.43 per family. The overall average per family

expenditure on green fodder came to Rs.4679.75 (17.67 per cent) for dry fodder it came to Rs. 7481.32 (28.24 per cent) and for concentrate it came to Rs. 8666.35 (32.72 per cent). While the expenditure on human labour came to Rs. 4080.00 (15.40 per cent) and on medicine and salt it came to Rs. 1580.00 (05.97 per cent). The table further revealed that per family overall average variable cost in case of marginal farmers came to Rs. 20790.27. The expenditure on green fodder, dry fodder and concentrates came to Rs. 3662.46 (17.62 per cent), Rs. 5561.27 (26.75 per

Table 3: Maintenance cost per family in different categories of Small and Marginal farmers (in Rs.)

Herd size	Fixed cost	Variable cost	Gross maintenance cost	Dung Value	Net maintenance cost
Small farmers					
I	9184.52	13580.48	22765.00	725.5	22039.50
II	14358.14	28301.22	42659.36	1301.2	41358.16
III	23694.68	54532.74	78227.42	2396.85	75830.57
Overall	14119.62	26487.43	40607.05	1264.32	39342.73
Marginal farmers					
I	8837.96	12750.39	21588.35	650.3	20938.05
II	13413.91	26900.96	40314.87	1240.5	39074.37
III	20045.64	45079.25	65124.90	2014.65	63110.25
Overall	11935.49	20790.27	32725.76	984.40	31741.35

cent) and Rs. 7253.75 (34.69 per cent) respectively. While the expenditure on human labour and medicine etc. came to Rs. 916.49 (16.34 per cent) and Rs. 916.49 (04.41 per cent), respectively. It can be concluded that the variable cost per family was more in case of small farmers in all herd size groups as compared to marginal farmers.

Maintenance cost per family

The maintenance cost was worked out by adding the fixed and variable cost, while the net maintenance cost was worked out by deducting the value of dung from total gross maintenance cost as shown in Table 3. The overall average gross maintenance cost in case of small farmers was Rs. 40607.05 per family being about Rs. 14119.62 as fixed cost and Rs. 26487.43 as variable cost. The overall average net maintenance cost came to Rs. 39342.73 per family. The results in table further indicate that overall average gross maintenance cost per family in case of Marginal farmers came to Rs. 32725.76 being about Rs. 11935.49 as fixed cost and Rs. 20790.27 as variable cost. The overall net maintenance cost came to Rs. 31741.35 per family. It can be concluded from the table that net maintenance cost per family was higher in case of small farmers as compared to marginal farmers. It was due to more variable and fixed cost on small farmers as compared to marginal farmers. The net maintenance cost was more in all herd size groups of small farmers as compared to marginal farmers.

Cost of milk production per litre

The cost of milk production was also worked out and was shown in Table 4 indicates that the overall average cost of milk production per liter was Rs. 10.08 in case of small farmers. The cost of milk production

per litre overall average came to Rs. 9.62 in case of marginal farmers. Cost of milk production per litre was higher in case of Small farmers as compared to marginal farmers. It was due to better feeding of animals to get higher Production of milk. The milk production per animal was more in all herd size of small farmers as compared to marginal farmers.

Table 4: Cost of milk production per litre in different herd size groups of Small and Marginal Farmers (in Rs.)

Herd size	Milk production/ animal/year (in litre)	Net maintenance per animal/year (Rs.)	Per litre cost of milk production (Rs.)
Small farmers			
I	1825.00	19299.80	10.57
II	1927.00	19396.28	10.06
III	1975.50	19090.52	9.66
Overall	1921.32	19375.75	10.08
Marginal farmers			
I	1741.50	18250.27	10.48
II	1850.50	17950.99	9.70
III	1870.00	17941.19	9.59
Overall	1814.38	17466.71	9.62

Gross return from milk production per family

The data presented in table 5 illustrate gross returns from milk production per family in different herd size of groups of small and marginal farmers. The table 5 shows that the overall average gross returns from milk production per family came to Rs.50018.51 in case of small farmers. In case of marginal farmers the overall average gross returns from milk production per family came to Rs. 37823.85. It shows that the gross returns from milk production per family was more in all herd size groups of small

farmers as compared to marginal farmers. It was due to more milk production and sale of milk at remunerative prices by majority of small farmers. The marginal farmers usually sold their milk to vendors at lower price on account of money taken in advance from vendors to manage dairying business.

Table 5: Gross returns from milk production per family in different herd size of groups of small and marginal farmers (in Rs.)

Herd Size	No. of families	Milk production/ family	Gross returns from milk/family
Small farmers			
I	35	1825.00	25093.75
II	25	3854.00	52992.50
III	15	7506.90	103219.88
Overall	75	3637.71	50018.51
Marginal Farmers			
I	45	1741.50	23074.88
II	20	3701.00	49038.25
III	10	6171.00	81765.75
Overall	75	2854.63	37823.85

Net returns from milk per family

The following table 6 indicates the net returns from milk per family in different herd size of groups in small and marginal farmers.

The table 6 indicates that the overall average net returns from milk per family in case of small farmers came to Rs.10675.78. The table further indicates that the overall average net returns from milk per family in case of marginal farmers came to Rs. 6082.50. It can be concluded that the net returns from milk per family in all herd size of small farmers was

Table 6: Net returns from milk per family in different herd size groups in small and marginal farmers (in Rs)

Herd Size	No. of families	Gross returns from milk per family	Net maintenance cost per family	Net milk return per family
Small farmer				
I	35	25093.75	22039.50	3054.25
II	25	52992.50	41358.16	11634.34
III	15	103219.88	75830.57	27389.31
Overall	75	50018.51	39342.73	10675.78
Marginal farmers				
I	45	23074.88	20938.05	2136.83
II	20	49038.25	39074.37	9963.88
III	10	81765.75	63110.25	18655.50
Overall	75	37823.85	31741.35	6082.50

higher as compared to marginal farmers. It was due to more milk production found in case of small farmers. And the small size of farm the farmers got higher price of milk also.

Farm business income from milk per family

The farm business income from milk production was also estimated. Farm business income is derived by adding the value of family labour wages and interest on owned fixed capital with net income from milk as shown by table 7.

The table 7 reveals that the overall average farm business income from milk came to Rs.18849.07, comprised of value of family labour wages which came to Rs. 4080.00 and interest on owned fixed capital came to Rs. 4093.29 per family in case of small farmers. The table further indicates that the overall average farm business income from milk came to Rs.12987.36, on marginal farmers, it was constituted by the net income from milk of Rs. 6082.50, value of family labour wages of Rs. 3396.30 and interest on owned fixed capital of Rs. 3508.56 per family in case of marginal farmers. It can be concluded that the farm business income from milk per family was highest in all herd size groups of small farmers in comparison to marginal farmers. But the income from dairy business is significant on all farm size groups.

Cost benefit ratio

The cost – benefit ratio which expresses the relationship between the unit cost and the proportionate returns which is another parameter of looking into the efficiency of dairy husbandry. The cost benefit ratio is the ratio between gross return to the net maintenance cost. The cost benefit ratio was estimated and the results are shown in table 8.

Table 7: Farm business income from milk per family in case of small and marginal farmers (in Rs.)

Herd Size	Net income from milk per family	Family labour wages	Interest on owned fixed capital	Total farm business income
Small farmers				
I	3054.25	1918.40	2780.24	7752.89
II	11634.34	4125.89	4169.66	199929.89
III	27389.31	9083.35	6495.80	42968.46
Overall	10675.78	4080.00	4093.29	18849.07
Marginal farmers				
I	2136.83	1941.79	2680.24	6758.86
II	9963.88	4398.74	3861.41	18224.03
III	18655.50	7990.72	5536.15	32182.37
Overall	6082.50	3396.30	3508.56	12987.36

Table 8: Cost benefit ratio per family in different herd size of small and marginal farmers groups families

Herd size	Net Maintenance Cost/Family (Rs.)	Gross Returns From Milk/Family (Rs.)	Cost Benefit Ratio
Small farmers			
I	22039.50	25093.75	1:1.14
II	41358.16	52992.50	1:1.28
III	75830.57	103219.88	1:1.36
Overall	39342.73	50018.51	1:1.27
Marginal farmers			
I	20938.05	23074.88	1:1.10
II	39074.37	49038.25	1:1.25
III	63110.25	81765.75	1:1.29
Overall	31741.35	37823.85	1:1.19

The table 8 indicates that in case of small farmers per family overall average income per rupee of investment came to Rs.1.27. The table further indicates that in case of marginal farmers, the overall average income per rupee of investment came to Rs.1.19. It can also be concluded that income per rupee of investment was highest in all herd size groups of small farmers in comparison to marginal farmers. It was due to sale of milk at remunerative price by majority of small farmers as well as higher milk production per animal in case of small farms. The returns are significant per Rupees of investment on all herd size groups on small and marginal farms. Thus dairying is profitable business in case of weaker sections farm families where land is scarce and labour is sufficient.

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