



E-ISSN: 2278-4136
P-ISSN: 2349-8234
JPP 2018; 7(3): 1683-1686
Received: 09-03-2018
Accepted: 11-04-2018

Priyadarshini C Gadad
Department of Agricultural
Economics, College of
Agriculture, University of
Agricultural Sciences, Dharwad,
Karnataka, India

Dr. SM Mundinamani
Department of Agricultural
Economics, College of
Agriculture, University of
Agricultural Sciences, Dharwad,
Karnataka, India

An economic analysis of milk production by dairy entrepreneurs of Vijayapura milk union

Priyadarshini C Gadad and Dr. SM Mundinamani

Abstract

A study to assess the economic analysis of milk production by dairy entrepreneurs of Vijayapura Milk union district. Multistage sampling procedure was followed for selection of 80 sample member and non-member dairy farmers. The data pertained to the agricultural year 2017-18. Budgeting technique was used to analyze the data. The per year total variable cost incurred by member of Milk cooperative societies in production of milk from buffalo, crossbreed cow and indigenous cow was ₹24959.93, ₹31982.00 and ₹19714.40 respectively and ₹20761.38, ₹27396.87 and ₹17383.77 for non-member dairy entrepreneurs. The major fixed cost of dairy farm is depreciation on dairy animals and building. The cost of depreciation on crossbreed cow was found more in both member (₹5675.20) and non-member dairy farmer's (₹5178.00) compared to depreciation on building and machinery. The total cost incurred on buffalo, crossbreed cow and indigenous cow by member dairy farmers was ₹31322.78, ₹40882.00 and ₹24482.60 respectively and ₹26913.06, ₹35450.58 and ₹20781.73 by non-member dairy farmer. The gross return obtained by member farmers was ₹55156.80, ₹73236.65 and ₹38485.30 from buffalo, crossbreed cow and indigenous cow respectively, similarly for non-member farmers the gross returns was ₹40443.24, ₹59890.60 and ₹30495.70 per animal per year. Returns from sale of milk contributed the maximum share. The B: C ratio was calculated for both member and non-member dairy farmers and it was found that B: C ratio of buffalo, crossbreed cow and indigenous cow was 1.76, 1.79 and 1.57 respectively and it was 1.50, 1.68 and 1.46 for non-member farmers. Since B.C ratio in case of member farmers was higher compared to non-member farmers, the impact of milk union on the dairy entrepreneurs is a profitable venture and has positive influence on the standard of living and economic status of the farming community in the study area.

Keywords: Cost and returns, milk production, member farmers, non-member farmers

Introduction

Dairying in India, in general, is closely interwoven as an integral part of agriculture and it has been recognized as an instrument of economic and social change especially for the weaker sections of the rural community. In dairying, a change that is taking place is shift from the maintenance of dairy animals on home grown feed inputs to purchased feed inputs, due to the decreasing size of land holding and shrinking common property resource base. Cost of milk production plays an important role in portraying economic viability of a dairy enterprise. It is a critical economic indicator for milk producers, consumers and policy makers in order to provide an effective linkage between the milk producers and consumers for fixing the price of milk rationally. Generally, a milk producer can increase his dairy income in two ways either by increasing the milk production or by reducing the cost of milk production. Cost of milk production often becomes a policy issue, when milk producers complain that the price of milk they are getting does not cover cost of milk production. With the galloping growth in human population, the demand for crop and livestock production is ever increasing. Currently, livestock is one of the fastest growing agricultural sub-sectors in developing countries and this sector provides regular employment to 11 million people in principal status and 9 million people in subsidiary status. Its share to total GDP is around 4.11 per cent and is largest segment of the agricultural sector. This growth is driven by rapidly increasing demand for livestock products, driven by population growth, urbanization and increasing incomes.

Dairying definitely offers itself as a prospective farm diversification means with immense commercial potential. Traditionally dairying has been a small holder's enterprise, now it is passing through transition and farmers have taken up dairy farming as a commercial enterprise. The proportion of milk produced on these commercial dairy herds in total milk production of the country may not be very high, yet they influence the economy of the respective area to a greater extent as their number is growing rapidly. These farms can only sustain if they are earning reasonable profit, which is the prime concern of the dairy enterprise. Therefore, it is very pertinent to study the economics of these herds, which demands a detailed analysis of the

Correspondence

Priyadarshini C Gadad
Department of Agricultural
Economics, College of
Agriculture, University of
Agricultural Sciences, Dharwad,
Karnataka, India

estimates of cost of milk production and returns of dairy enterprise. The information on the cost and returns from milk production will provide useful insight into the parameters of profitability of dairy enterprise to the owner so that the full genetic potential of the animals can be tapped. Also since investors give high priority to profitable returns, the study attempts to find out whether profitable margins or sufficient returns are likely to emerge from that investment or not? Economic analysis of dairy farming provides the basis for delineating the possibilities of controlling costs of milk production and increasing the returns to make it a potential dairy enterprise (Bhowmik and Sirohi 2008) [3]. The present study focuses on all production and profitability traits of dairy enterprise to answer such issues. Thus, in order to evaluate and explore the possibilities of dairy farming as a potential enterprise in Vijayapura, a study was undertaken in 2017-18 with focus on estimation of the cost and returns of milk production.

Material and Methods

The present study was taken up in Karnataka state. Multistage sampling technique was adopted for selection of farmers for the study. Vijayapura milk union district under University of Agricultural Sciences Dharwad jurisdiction has the good number of dairy cooperatives and is one of the livestock rearing district which has got favorable condition for production of different food and fodder crops. Hence Vijayapura milk union was selected for the study. The Vijayapura milk union covers two districts, viz., Bagalkot and Vijayapura and these two districts covers eleven taluks, and from these two districts the taluk with highest milk production in each district was selected. Two villages from each selected taluk, where the Dairy farming is widely practiced and produced highest milk were selected for the study. From each selected village, 20 dairy farmers were selected randomly. Out of 20 randomly selected farmers' 10 each from members and non-members of milk cooperative societies. Thus, the total sample size for the study was 80 farmers. The primary data on cost and returns of milk production was collected from the sample farmers through pre tested schedule. The data so collected pertained to the year 2017-18. Budgeting technique was used to estimate the costs and returns in milk production.

Results and Discussion

Milk production cost and returns obtained from different dairy animal breeds of member and non-member dairy farmers in Vijayapura milk union.

The costs incurred on various inputs in milk production are presented in Table 1 and 3. Dairy farmers incur cost on inputs such as green fodder, dry fodder, concentrates, veterinary medicines and labour charges.

The per year total variable cost incurred by member of Milk cooperative societies in production of milk from buffalo, crossbreed cow and indigenous cow was ₹24959.93, ₹31982.00 and ₹19714.40 respectively and ₹20761.38, ₹27396.87 and ₹17383.77 for non-member dairy

entrepreneurs. The major items of variable costs incurred per animal were feed which includes green fodder, dry fodder and concentrate. The cost incurred by member farmers for concentrates on buffalo, cross breed cow and indigenous cow rearing was ₹5500.22, ₹9115.50 and ₹3755.38 respectively and that of non-member farmers was ₹3420.00, ₹6422.00 and ₹2485.58 followed by green fodder cost. It is because the cross breed cow requires more feeds as compared to buffalo and indigenous cows and in this union districts due to lack of irrigation facility and low rain fall, availability of green fodder throughout the year were not possible so farmers more dependent on concentrates than on the green and dry fodder. The main objective of dairy farming is to maximize the milk production; this was fulfilled by feeding the animal with the green and dry fodder as well as concentrates. Thus the cost incurred on feed constituted more than half of the costs incurred in rearing of buffalo, crossbreed cow and local cow.

The major fixed cost of dairy farm is depreciation on dairy animals and building. The cost of depreciation on crossbreed cow was found more in both member (₹5675.20) and non-member dairy farmer's (₹5178.00) compared to depreciation on building and machinery. The total cost incurred on buffalo, crossbreed cow and indigenous cow by member dairy farmers was ₹31322.78, ₹40882.00 and ₹24482.60 respectively and ₹26913.06, ₹35450.58 and ₹20781.73 by non-member dairy farmer. The expenditure on various inputs showed that the farmers have less scope to reduce the variable costs by altering the breed of animal, feeding charges and veterinary medicines.

Returns from milk production (per animal/annum)

The details of the returns from the dairy farming by the sample farmers were presented in Table 2 and 4. It can be seen from the table that the main share of returns was from the sale of milk.

The gross return obtained by member farmers was ₹55156.80, ₹73236.65 and ₹38485.30 from buffalo, crossbreed cow and indigenous cow respectively, similarly for non-member farmers the gross returns was ₹40443.24, ₹59890.60 and ₹30495.70 per animal per year. Returns from sale of milk contributed the maximum share, the return from sale of milk in case of member dairy farmers with respect to buffalo, crossbreed cow and indigenous cow was ₹40468.84, ₹58317.56 and ₹26308.30 and in case of non-member farmers the returns was ₹29638.18, ₹42725.72 and ₹20483.50 followed by sale of manure, sale of young ones and Sale of milk products. The B: C ratio was calculated for both member and non-member dairy farmers and it was found that B: C ratio of buffalo, crossbreed cow and indigenous cow was 1.76, 1.79 and 1.57 respectively and it was 1.50, 1.68 and 1.46 for non-member farmers. Since B.C ratio in case of member farmers was higher compared to non-member farmers, the impact of milk union on the dairy entrepreneurs is a profitable venture and has positive influence on the standard of living and economic status of the farming community in the study area.

Table 1: Cost involved in milk production from different dairy animals of the member farmers of Vijayapura milk union (₹/animal/annum) (n=40) (in ₹)

S. No.	Particulars	Buffalo	Crossbred cow	Indigenous cow
I	Variable cost			
1	Green fodder	4157.00 (13.27)	4457.40 (10.90)	2938.14 (12.00)
2	Dry fodder	1586.12 (05.06)	2130.80 (05.21)	1119.11 (04.57)
3	Concentrates	5500.22 (17.55)	9115.50 (22.29)	3755.38 (15.33)
4	Labour	8395.00 (26.80)	9928.00 (24.28)	8095.70 (33.06)
5	Veterinary expenses	597.32 (01.90)	711.81 (01.74)	293.32 (01.19)
6	Electricity	700.01 (02.23)	815.50 (01.99)	491.18 (02.00)
7	Breeding expenses	423.00 (01.35)	498.98 (01.22)	211.00 (00.86)
8	Transportation	502.38 (01.60)	455.00 (01.11)	350.00 (01.42)
9	Milking equipment	1250.00 (03.99)	1500.00 (03.66)	1000.22 (04.08)
10	Interest on working cost (8%)	1848.88 (05.90)	2369.04 (05.79)	1460.32 (05.96)
	Total variable cost	24959.93 (79.68)	31982.00 (78.23)	19714.40 (80.52)
II	Fixed cost			
1	Depreciation on Buildings	1283.71 (04.09)	2006.16 (04.90)	945.90 (03.86)
2	Depreciation on Machinery	250.28 (00.79)	300.68 (00.73)	147.95 (00.60)
3	Depreciation on animals	4172.60 (13.32)	5675.20 (13.88)	3182.60 (12.99)
4	Interest on fixed cost (11.5%)	656.26 (02.09)	917.93 (02.24)	491.79 (02.00)
	Total fixed cost	6362.84 (20.31)	8899.97 (21.76)	4769.24 (19.47)
	Total cost (I + II)	31322.78 (100.00)	40882.00 (100.00)	24482.60 (100.00)

Table 2: Cost involved in milk production from different dairy animals of the non-member dairy entrepreneurs' of Vijayapura milk union (₹ /animal/annum) (n=40) (in ₹)

S. No.	Particulars	Buffalo	Crossbred cow	Indigenous cow
I	Variable cost			
1	Green fodder	3208.15 (11.92)	4004.05 (11.29)	2568.50 (12.35)
2	Dry fodder	1575.00 (05.85)	2009.98 (05.66)	1123.11 (05.40)
3	Concentrates	3420.00 (12.70)	6422.00 (18.11)	2485.58 (11.96)
4	Labour	7949.70 (29.53)	9008.20 (25.41)	7745.30 (37.26)
5	Veterinary expenses	565.70 (02.10)	609.77 (01.72)	232.70 (01.11)
6	Electricity	450.60 (01.67)	598.17 (01.68)	309.62 (01.48)
7	Breeding expenses	298.19 (01.10)	582.70 (01.64)	98.67 (00.47)
8	Transportation	677.16 (02.51)	732.60 (02.06)	532.60 (02.56)
9	Milking equipment	1079.00 (04.00)	1400.00 (03.94)	1000.00 (04.81)
10	Interest on working cost (8%)	1537.88 (05.71)	2029.39 (05.72)	1287.68 (06.19)
	Total variable cost	20761.38 (77.14)	27396.87 (77.28)	17383.77 (83.64)
II	Fixed cost			
1	Depreciation on Buildings	1222.00 (04.54)	1837.26 (05.18)	789.70 (03.79)
2	Depreciation on Machinery	202.70 (00.75)	207.80 (00.58)	157.80 (00.75)
3	Depreciation on animals	4092.50 (15.20)	5178.00 (14.60)	2100.00 (10.10)
4	Interest on fixed cost (11.5%)	634.478 (02.35)	830.65 (02.34)	350.46 (01.68)
	Total fixed cost	6151.67 (22.85)	8053.71 (22.71)	3397.96 (16.35)
	Total cost (I + II)	26913.06 (100.00)	35450.58 (100.00)	20781.73 (100.00)

Note: Figures in parentheses are percentage to respective total.

Table 3: Returns from different dairy animals of the member farmers of Vijayapura milk union (₹/ animal / annum)

S. No	Particular	Buffalo	Crossbred cow	Indigenous cow
1	Sale of Milk	40468.84 (73.37)	58317.56 (79.63)	26308.30 (68.36)
2	Sale of milk products	5320.00 (09.65)	2254.59 (03.07)	2016.00 (05.24)
3	Sale of Manure	6068.00 (11.00)	5864.50 (08.01)	5661.00 (14.71)
4	Sale of animals (1 Milch animal/ Five year)	3300.00 (05.98)	6800.00 (09.29)	4500.00 (11.69)
	Total / Gross Return	55156.80 (100.00)	73236.65 (100.00)	38485.30 (100.00)
	Net return	23834.10	32354.64	14002.60
	B:C ratio	01.76	01.79	01.57

Note: Figures in parentheses are percentage to respective total.

Table 4: Returns from different dairy animals of the non-member dairy entrepreneurs' of Vijayapura milk union (₹/ animal / annum)

S. No	Particular	Buffalo	Crossbred cow	Indigenous cow
1	Sale of Milk	29638.18 (73.28)	42725.72 (71.34)	20483.50 (67.16)
2	Sale of milk products	1813.46 (04.48)	1831.20 (03.06)	1207.23 (03.95)
3	Sale of Manure	5790.50 (14.32)	7233.50 (12.08)	4625.00 (15.15)
4	Sale of animals (1 Milch animal/ Five year)	3201.10 (07.92)	8100.21 (13.52)	4180.00 (13.74)
	Total / Gross Return	40443.24 (100.00)	59890.60 (100.00)	30495.70 (100.00)
	Net return	13530.18	24440.10	9713.95
	B:C ratio	01.50	01.68	01.46

Note: Figures in parentheses are percentage to respective total.

Conclusion

It can be concluded from above discussion that the cost of milk production and income measures obtained in the present study suggested that cross breed cow milk production is relatively more profitable than buffalo and local cow in the study area. Thus, sound economic logic exists for persuading both the member and non-member households to continue cross breed cow rearing to enhance their income. Hence, adequate attention should be paid to promote cross breed cow up gradation programme. The expenditure on feed, fodder and concentrates could be reduced by adopting high yielding varieties of grasses, legumes and fodder crops on farmers' fields, replacing the local milch animals with improved breeds at faster rate. The Government should provide the necessary input supplies at subsidized rates to the dairy farmers so that these breeds can be reared cheaply and commercially.

References

1. Aslam M, Khaushk AM. Economic analysis of buffalo dairy farms in Sindh. *Indus J Biol. Sci.* 2004; 1(3):231-240.
2. Bairaw KC, Varadan RJ, Jhahria A, Meena DK. An economic appraisal of livestock sector in India. *Indian J Anim. Res.* 2013; 47(2):105-112.
3. Bhowmik P, Sirohi S. Cost of milk production and returns from dairying in South Tripura. *Indian J Dairy Sci.* 2008; 61(4):303-307.
4. Dixit PK, Dhaka JP, Sajeesh MS, Aravinda Kumar MK. Economics of milk production in Kerala - An inter-regional empirical study. *Indian J Agric. Econ.* 2004; 59(3):646.
5. Meena GL, Jain DK, Chandel BS. Economic Analysis of Milk Production in Alwar District of Rajasthan, *J Dairying, Foods & H.S.* 2010; 29(1):1-7.
6. Nirish Chandra Sahu, Jancy Gupta, Singh AK, Chaudhari BK. viability of commercial dairy farming in Haryana. *J Dairying, Foods & H.S.* 2012; 31(3):216-222.
7. Priyadarshini C Gadad, Kunnal LB. Cost, returns and resource use efficiency in milk production by the members of milk producer's co-operative societies in Dharwad district of Karnataka. *Agric. Update.* 2018; 13(2).
8. Sonawane TS, Nimbalkar, Sudhakar S, Kolekar PL. Economic analysis of dairy farms in Amravati district. *Internat. Res. J Agric. Eco. & Stat.* 2016; 7(2):118-126.
9. Sumit Mahajan, Chauhan AK, Datta KK, Azad MS, Sharma VK. Economics of Milk Production in Rural and Periurban Dairy Farms in Ludhiana, India, *Asian J Dairy & Food Res.* 2013; 32(1):25-29.
10. Velanganni S. A comparative analysis of the marketing efficiency of a cooperative dairy industry and private dairy agency, *Indian Coop. Rev.* 2009; 50(4): 261-269.