An Economic Analysis of Milk Production in Sultanpur District of Uttar Pradesh

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Abstract

In the recent past, India has made rapid strides in milk production. Milk production is increasing at 1 per cent per annum in the world. While in India, it is increasing at more than 4 per cent. Dairying is one of the fastest growing enterprises in the country, achieving 7.4 per cent growth rate during 9th five year plan (All India Dairy Business Directory, 2001). Since demand for milk and milk product is income elastic, consumption can improve only when the income of producer increases along with increase in production.

Keywords: Milk production, benefit-cost ratio, constraints

Introduction

Milk is a complete food. Growth rate of 4.5 per cent has been achieved by the dairy sector during the past decade as compared to 2.00 per cent growth rate by the agricultural sector. Target of doubling milk production by 2015 is possible if organized dairying is introduced on a large scale. India stand at first position in milk production in the world after stagnation of 20 million tonnes of milk production during 20 years, i.e., between 1950–1970, the milk production in India crossed 30 million tonnes in 1980, 50 million tonnes in 1989 and 90.70 million tonnes in year 2004-2005. Uttar Pradesh (U.P.) is the first milk producing state in India. The milk production in U.P. was recorded 5,728 tonnes in 1980, 12,087 tonnes in 1995 and 19,769 tonnes in 2004-05. However in spite of glorious records, there are several constrains towards production of milk. Keeping in view the importance of milk production, it is essential to find out these constraints faced by the milk producer at the field levels. An attempt has been made in this paper to make an economic analysis of milk production in Uttar Pradesh. The specific objectives of the study are:

1. to study the socio-economic profile of the different categories of milk producers;

2. to work out the economics of milk production of cow and buffalos;

3. to identify the constraints in milk production; and

4. to suggest the suitable remedies based on the findings of the study.

Data Base and Research Methodology

Multi stages sampling techniques have been employed to select the district, blocks, villages and respondents. Sultanpur district of Uttar Pradesh comprises of twenty three blocks. All the blocks of Sultanpur district were re-arranged in descending order according to the magnitude of milk production and ultimately two blocks viz., Lambhua and Jaisingpur having highest milk production were selected purposively for this study.

A list of the villages of these two selected blocks has been prepared with the help of block personnel and five villages from each block have been selected randomly. Thus 10 villages have been selected for the study. In the next stage all the milk producers of these 10 villages have been categorised into three size groups based on the number of milch animal i.e. Small (1 milch animal), medium (2-3 milch animals) and large (4 and above milch animals). Forty milk producers from each category have been selected randomly for in-depth study. Finally, 120 milk producers have been selected as the ultimate sample unit of the study.

Results and Discussion

The literacy percentages of small, medium and large farms are 85.18, 82.94 and 87.36 per cent, respectively. The average size of holding of small, medium and large farms is found to be 1.84, 1.75 and 2.18 hectares of which 88.07, 87.57 and 89.26 per cent are irrigated. The overall average size of land holding is 1.92 hectare and there is indirect relationship between area irrigated and size of farms. Among milch animals, the proportion of milch cow has been found to be highest (55.27 per cent) than that of its counterpart i.e. milch buffaloes (44.73 per cent).

On an average, the per farm investment has been found to be Rs. 3,09,020.16. The highest investment has been recorded in case of large farms (Rs. 4,64,932.5) followed by medium (Rs. 2,60,092.50) and small (Rs. 2,02,032.50) farms. The major assets of the sample farms are implements and machinery (47.70 per cent), building (37.18 per cent) and livestock (15.10 per cent).

It has been observed that the overall cropping intensity is 167.41 per cent. The cropping intensity is highest in medium farms (187.33 per cent) followed by large (165.52 per cent) and small (149.36 per cent) farms. A substantial portion (72.96 per cent) of the cropped area is under green fodder crop followed by other zaid season crops. Collection of milk by cooperative agencies has been found to be 84,755 quintal in 2004-05 in which it is highest in January (11,486 quintal).

Table-1 reveals that on an average the net cost per milch cow per day in small farms is Rs. 51.64 followed by large (Rs. 36.03) and medium Rs. 31.74 farms. The gross returns are Rs. 98.27/- in small followed by Rs. 48.55/- in large and Rs. 45.58/- in medium farms. Among the farms, the average milk yield is highest in small farms (7.97 litre) followed by large (3.90 litre) and medium (3.65 litre) farms. Accordingly, the net profit is highest in small farms followed by medium and large farms. The benefit cost ratio has been found to be highest in small farms (1.90) followed by medium (1.43) and large (1.35) farms, respectively.

In case of buffalo, the net cost per milch buffalo per day in small farms is Rs. 48.77/- followed by large (Rs. 39.95/-) and medium (Rs. 39.46/-) farms, respectively. Gross return in small farm is Rs. 85.70/- followed by medium (Rs. 57.91/-) and large (Rs. 44.37/-) farms, respectively. The average milk yield per day is highest in small farms (6.33 litre) followed by medium (4.24 litre) and large (3.24 litre) farms. The benefit cost ratio has been found to be highest in case of small farms followed by medium and large farms, respectively.

Table-2 reveals that on an average the breakeven point in case of milch cow in relation to fixed cost, variable cost, total cost per animal and variable cost per litre of milk turns out to be Rs. 2340.48/-, Rs. 8796.58/-,

Table 1: Economics of milk per milch animal per day

Category of milch animals	Small size group (1 milch animal)				Medium size group (2-3 milch animal)				Large size group (4 & above milch animals)			
	Rainy	Winter	Summer	Overall	Rainy	Winter	Summer	Overall	Rainy	Winter	Summer	Overall
Cow												
Net Cost (Rs.)	54.04	44.87	56.03	51.64	29.22	32.12	33.91	31.74	31.76	38.14	38.19	36.03
Milk yield (lit)	8.94	8.187	6.81	7.97	3.84	4.098	3.019	3.65	4.345	3.958	3.398	3.90
Price of milk (Rs.)	12.31	12.31	12.37	12.33	12.43	12.43	12.62	12.49	12.18	12.86	12.32	12.45
Gross return (Rs.)	110.05	100.78	84.23	98.27	47.73	50.93	38.09	45.58	52.92	50.89	41.86	48.55
Net profit (Rs.)	56.01	55.91	28.2	46.63	18.51	18.81	4.18	13.84	21.16	12.75	3.67	12.52
Benefit cost Ratio	2.03	2.24	1.50	1.90	1.63	1.58	1.12	1.43	1.66	1.33	1.09	1.35
Buffalo												
Net cost	41.95	48.57	55.82	48.77	34.37	42.79	41.24	39.46	36.70	41.58	41.59	39.95
Milk Yield (lt)	7.21	6.458	5.33	6.33	4.75	4.47	3.50	4.24	3.53	3.15	3.04	3.24
Price of Milk (Rs.)	13.54	13.54	13.54	13.54	13.30	13.69	14.00	13.66	13.45	13.45	14.60	13.80
Gross Return (Rs.)	97.62	87.44	72.16	85.70	63.175	61.19	49	57.91	47.47	42.36	44.38	44.37
Net Profit (Rs.)	55.67	38.87	16.34	36.93	28.80	18.4	7.76	18.45	10.77	0.78	2.79	4.78
Benefit cost Ratio	2.32	1.80	1.29	1.75	1.83	1.43	1.18	1.46	1.29	1.01	1.06	1.12

Table 2: Breakeven point for milch animals on different herd size groups

Particulars	Milch Cow (265 day)				Milch Buffalo (300 day)			
	Small	Medium	Large	Overall	Small	Medium	Large	Overall
Milk yield/animal (Rs.)	2112.05	967.25	1033.50	1370.93	1899.00	1272.00	942.6	1371.20
Fixed cast/animals (Rs.)	760.55	1820.55	4440.34	2340.48	2220.0	3303.30	7029.90	4184.40
Variable cost/ animals (Rs.)	12924.05	6590.55	6875.16	8796.58	12411	8534.7	4952.1	8632.60
Total Cost /(Rs.)	13684.6	8411.1	11315.50	11137.06	14631.00	11838.00	11982.00	12817.00
Variable cost/ litre of milk	6.11	6.81	6.65	6.52	6.5	6.70	5.25	6.15
Price/litre of milk (Rs.)	12.33	12.49	12.45	12.42	13.54	13.66	13.50	13.56
Breakeven point (lit)	122.27	320.51	765.57	396.69	315.34	474.61	852.10	564.69
% of breakeven point to total output	5.79	33.13	74.07	28.93	16.60	37.31	90.39	41.18

Rs. 11137.06/- and Rs. 6.52/-, respectively. The overall breakeven point of milch cow has been worked out to be 396.69 litres. The breakeven point to total output is highest in large farms (74.07 per cent) followed by medium (33.13 per cent) and small (5.79 per cent) farms, respectively. Similarly, the breakeven point in case of milch buffalo, these are Rs. 4184.40/-, Rs. 8632.60/-, Rs. 12817.00/- and 6.15/-, respectively. The overall breakeven point in case of milch buffalo has been worked out to be 564.69 litres i.e. 41.18 per cent of total output. The breakeven point in case of total output is highest in large farms (90.39 per cent) followed by medium (37.31 per cent) and small (16.60 per cent) farms. However, it may be noted that there are several constraints in milk production as per the perception of the livestock owners. These constraints may be enumerated as follows:

1. The cost of feed is very high in summer season.

2. Non-availability of good quality of feed and fodder for getting best results.

3. Grazing facility is not available in all season.

4. There is no facility of artificial insemination.

5. Infection due to diseases is very prominent.

6. Lack of availability of vaccination, medicines and technical person at the time of occurrence of diseases.

7. Availability of veterinary doctor at the time of need.

Conclusion

An attempt has been made in this paper to begin with a general overview of milk production in India. This is followed by a detailed study of dairy farming in Uttar Pradesh State, particularly of the small-scale producers owning two to four milking animals who form the majority. The purpose is to assess their prospects for earning more from dairy farming, and to identify which areas of intervention in terms of management or policy are likely to be most favourable to them.

Three farm sizes have been selected to represent typical farms in Uttar Pradesh, with one, two to three, and four and above dairy animals respectively. Each farm is described in detail with assets, costs, profits and other economic information and these are discussed in the light of the reality facing small-scale dairy farmers.

The analysis concludes that the 'typical' farms with two to three dairy animals have the potential to cut their production costs and compete with imports. However, farmers with two dairy animals - the majority - are unlikely to be able to compete in future, even on the domestic market, without major changes. Nevertheless, the Review also recognises that in India, as in most other countries, farmers will keep their dairy animals as long as no alternative employment opportunities exist.

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