An economic analysis of Production and maintenance cost of per milch animal Buffaloes of Ghazipur district of Uttar Pradesh

Abstract

The primary objective of this study is to thoroughly examine milk marketing dynamics within Bhanwarkola and Ghazipur Sadar Blocks of Gazipur District, Uttar Pradesh, focusing on the different channels used for milk marketing. The research aims to categorize cattle owners, investigate demographic trends among them, and understand how these factors correlate with milk marketing strategies and efficiency. This research employs a descriptive and analytical design to explore various aspects of milk marketing and cattle ownership. The study was conducted in the Gazipur District, Uttar Pradesh, focusing on the current state of cost of production of milk. The methodology includes a survey of cattle owners in the gazipur, classifying them into small, medium, and large-scale operations based on the number of cattle owned. The study also assesses the age, gender, education level, and social categories of cattle owners, alongside a comprehensive analysis of milk marketing channels, including costs, and market efficiency. Primary data were obtained from the sample milk producers using the survey approach through direct personal interviews conducted twice a year usinga pre-tested schedule. The purpose of the inquiry was to gather information regarding the cost of producing milk, the costofvariableinputssuchfeedandfodder,orroughages,greenfeedsuchasbajra Chari, maize chari, cow pea chari, berseem chari, and green grass chari. Dry feed such as paddy straw, wheat bhusa, concentrate such as wheat bran, corn kernels, linseed cake, brawn, chunni, arhar chunni, salt, and mustard oil the cost of labour (both family and hired), the cost of veterinary care, and other recurring costs and returns related to the production and sale of milk. The results revealed overall average cost was Rs. 50519.65 for buffalo(desi) and Rs. 56857.32 for buffaloes(murrah).

Keywords: productionandmaintenancecosts, cattle ownership, Gazipur, milch animal Buffaloes

INTRODUCTION

The dairy business places a lot of importance on the marketing of liquid milk. A significant amount of liquid milk is sold by private sellers or vendors, also referred to as "dudhias." Although they are highly well-liked in cities, most urban consumers are unaware of the degree and type of dilution techniques used by the bulk of milk dealers. On the other hand, the farmers in the villages were typically the ones dealing with other

issues including loans for the purchase of milch animals, lengthy marketing channels, a larger middlemen profit, a shortage of transportation, and chilling centres. One of the key tactics for changing the terms of trade in favor of agriculture under the new agricultural policy implemented in India in July 2020 is dairy marketing and market development. The price of processed milk and raw milk is predicted to climb, which will cause the dairy industry to grow and industrialize through higher capital expenditures for infrastructure, technical and institutional development in rural regions, and dairying operations.

The new, developing trend in the dairy industry aims to connect dairy producers at the local, national, and international levels with intricate networks of transportation, institutions, technology, and refrigerated storage as well as with consumers in a quick and effective manner. During the COVID-19 period, it may be possible to double farmers' income and help the rural populace become more self-sufficient and independent through the Government of India's Atmanirbhar (self-reliance) mission. Furthermore, while marketing and production practices and the level of stakeholder integration are consistent across the nation, there are regional and intra-regional variations in response to the socioeconomic, ecological, demographic, and political characteristics of the various regions. There seems to be a pressing necessity to recognize the marketing and distribution strategies for milk and the products it produces, as well as how they affect the growth of dairy farming locally and regionally, in order to create a trade system that benefits both farmers and consumers while being effective and profitable. Furthermore, the nation is moving toward "shining Indian dairying" through significant capital expenditures for the construction of institutional facilities such as veterinary hospitals, staff members who provide animal health care at the village panchayat level, EXIM facilities, and incentive-providing organizations at both the federal and state levels; and basic infrastructure facilities like link roads, assembling depots, chilling storage, and transportation.

Due to a variety of factors, including differing geographic and ecological conditions, the nature of the socioeconomic structures of producers and consumers, and variations in the degree of urbanization, income, sex ratio, education, and dominating species of

dairy animals, the nation's production and marketing of milk and milk products are unevenly developed. There is an urgent need to formulate strategies to achieve targeted development of dairy farming as a means of doubling farmers' income and achieving rural Atmanirbhar, or self-reliance. This can be achieved by conducting comparative analyses at the state and district level of dairy farming, marketing, processing, production, consumption, and development of allied activities, income, and employment. The goal of this study is to determine the current state of dairy product production and marketing in Uttar Pradesh.Keeping in view improving the economic condition of small, marginal and landless households and providing the milk to the consumers at cheaper rate directly this study was conducted.

MATERIALS AND METHODS

This research employs a descriptive and analytical design to explore various aspects of milk marketing and cattle ownership. The study was conducted in the Gazipur District, Uttar Pradesh, focusing on the current state of cost of production of milk. The methodology includes a survey of cattle owners in the gazipur, classifying them into small, medium, and large-scale operations based on the number of cattle owned. The study also assesses the age, gender, education level, and social categories of cattle owners, alongside a comprehensive analysis of milk marketing channels, including costs, and market efficiency. Primary data were obtained from the sample milk producers using the survey approach through direct personal interviews conducted twice a year usinga pre-tested schedule. The purpose of the inquiry was to gather information regarding the cost of producing milk, the costofvariableinputssuchfeedandfodder,orroughages,greenfeedsuchasbajra Chari, maize chari, cow pea chari, berseem chari, and green grass chari. Dry feed such as paddy straw, wheat bhusa, concentrate such as wheat bran, corn kernels, linseed cake, brawn, chunni, arhar chunni, salt, and mustard oil the cost of labour (both family and hired), the cost of veterinary care, and other recurring costs and returns related to the production and sale of milk. 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). Fifty milk producers from

each category have been selected randomly for in-depth study. Finally, 150 milk producers have been selected as the ultimate sample unit of the study.

RESULTS AND DISCUSSION

Production and maintenance cost of per milch animal Buffaloes

The various cost components including in rearing of a milch cow per day for different categories of household have been given in Table1. The total cost of milk production per milch animalbuffaloes (desi/murrah)perdayonsmall, medium, and large households; category was estimatedhavingRs.131.04andRs.140.68Rs.143.47 and Rs.160.14, and Rs.155.04 and Rs.180.8,respectivelywithanoverallaverage was Rs.138.41 and Rs.155.773. The fodder cost was the most important item of total maintenancecostaccountingformaximumon large Rs.52.86 and Rs.58.78, medium Rs.48.72 and54.70 andsmallRs.45.51and Rs.48.13 with on overall average having Rs. 47.59 and 52.52, respectively whereas maximum is concentrate estimated in large Rs. 21.60 and Rs. 25.98 followed by medium Rs. 20.70and 23.48, small Rs. 19.66 and 20.65 with an overall average having Rs. 20.27 and 22.72 in both buffaloes (desi/murrah), respectively. The labour cost was recorded maximum in case of large households followed bymedium, and small, category of households. The Veterinary charges were found highest for large Rs. 7.30 and 9.57, followed by medium and small households, respectively i.e., Rs 6.96 and 7.28, 6.48 and 1.76. The fixed cost was decreasing at increasing trend with the small, medium, and large category of households, whereas an overall average was found Rs. 5.54, and Rs. 6.57.TheoverallvariablecostwasrecordedRs. 132.87 and 149.201along with overall costs.

Table 1 Production and maintenance cost of per milch animal Buffaloes (desi/murrah) per day in Rs

S. No.	Particulars	Buffalo(deshi)			Buffalo(murrah)			Overall	
		Small	Medium	Large	Small	Medium	Large	Buffalo (deshi)	Maurrah
1.	Dry Fodder	27.82	29.83	32.61	29.63	32.50	35.65	29.15	31.88
2.	Green Fodder	17.69	18.89	20.25	18.50	22.20	23.10	18.44	20.64
3.	Concentrate	19.66	20.70	21.60	20.65	23.48	25.98	20.27	22.72
A	Grain	7.92	8.79	9.97	8.55	10.89	11.55	8.49	9.93
B	Khali	9.89	10.19	11.09	10.03`	11.09	12.85	10.16	11.00
C	Chuni/Choker	9.82	10.95	12.25	10.79	12.22	15.29	10.53	12.27
4.	Mineral Material	7.93	8.29	8.99	8.20	8.86	10.65	8.2	8.97
5.	Labor Charge	18.98	21.89	24.85	21.65	24.66	28.20	20.74	24.07
6.	Veterinary Charges	6.48	6.96	7.30	6.76	7.28	9.57	6.75	7.58
7.	Variable Cost Total	126.1	137.4	147.9	135.0	153.1	172.8	132.8	149.2
8.	Fixed Cost	4.85	5.98	7.13	5.65	6.96	7.96	5.54	6.57

	Grand Total (variable+fixed)	131.0	143.4	155.0	140.6	160.1	180.8	138.4	155.7

The different items considered in the productionandmaintenancecostsaregivenin Table 2. It was observed that total production and maintenance cost in buffalo (desi) per annum was highest in Rs. 18984.93 and lowest Rs. 23498.20 in case of large households and small households respectively. It was further observed that the total production and maintenance costs were also found highestRs. 19380.48 for large household and lowest Rs. 28516.66 for small in the case of buffalo(murrah). Total cost was observed in the buffalo(desi) Rs.2 3 4 9 8 . 2 0 ,29122.80and 1 8 9 8 4 . 9 3 whereasincasebuffalo(murrah)wasRs.28516.66,Rs.35027.70, and Rs. 19380.48 for small, medium, and large, households, respectively.

Amongvariouscategoriesofmilchanimalthe fodder cost was highest for largehousehold Rs. 19293.9 and Rs.21443.75 and lowest for small Rs.16611.5 and Rs.17567.45. The concentrates cost was found highest for large household Rs. 7884.00 and Rs.9482.7 lowest for small Rs.7175.9 andRs.7537.25inthecaseofbuffalo(desi/murrah) whereas, the labour charges was highest for large and medium households Rs. 9070.25 and Rs.10293.00,and7989.85and 9 0 0 0 . 9 respectivelyexcepttosmall Rs.7902.25and Rs. 6927.7 and Veterinary charges was found highestRs.2664.5 and 3493.05,andRs. 2540.4 and Rs. 2657.2 for large and medium households,respectivelyandlowestRs.2365.2 andRs. 2467.4for small households. The results revealed overall average cost was Rs. 50519.65 for buffalo (desi) and Rs. 56857.32 for buffaloes (murrah).

Table 2 Production and maintenance cost of per milch animal Buffaloes (desi/murrah) per annum in Rs.

S. N	Particulars	Buffalo (Desi)			Buffalo (Murrah)			Overall	
		Small	Medium	Large	Small	Medium	Large	Buffalo(desi)	Buffalo (murrah)
1.	Dry Fodder	10154.3	10887.95	11902.6	10814.9	11862.5	13012.2	10639.75	11636.2
2.	Green Fodder	6456.85	6894.85	7391.25	6752.5	8103	8431.5	6730.6	7329.2
3.	Concentrate	7175.9	7555.5	7884	7537.25	8570.2	9482.7	7398.55	8088.4
A	Grain	2890.8	3208.35	3639.05	3120.75	3974.85	4215.7	3098.85	3522.25
B	Khali	3609.85	3719.35	4047.85	3660.95	4047.85	4690.2	3708.4	4015
C	Chuni/Choker	3584.3	3996.75	4471.25	3938.35	4460.3	5580.8	3843.45	4467.6

4.	Mineral Material	2894.45	3025.85	3281.35	2993	3233.9	3887.2	2993	3274.05
5.	Labor Charge	6927.7	7989.85	9070.25	7902.25	9000.9	10293	7570.1	8785.55
6.	Veterinary Charges	2365.2	2540.4	2664.5	2467.4	2657.2	3493.05	2463.75	2766.7
7.	Variable Cost Total	46059.35	50183.85	53987.15	49285.9	55910.7	63086.6	48497.55	54458.31
A	Depreciation on cattle equipment/asset	369.45	485.22	603.51	476.14	496.3	631.6	439.70	519.01
B	Depreciation on animal	518.59	709.19	827.64	664.01	742.5	856.4	622.41	732.19
C	Interest on fixed capital	882.21	988.29	1171.3	922.10	1301.6	1417.4	958.16	1147.79
8.	Fixed cost	1770.25	2182.7	2602.45	2062.25	2540.4	2905.4	2022.1	2398.05
	Grand total (v+f)	47829.6	52366.55	56589.6	51348.2	58451.1	65992	50519.65	56857.3

CONCLUSION

The findings of present study concludes that the concentrates cost was found highest for large household Rs. 7884.00 and Rs.9482.7 lowest for small Rs.7175.9 andRs.7537.25inthecaseofbuffalo(desi/murrah) whereas, the labour charges was highest for large and medium households Rs. 9070.25 and Rs.10293.00,and7989.85and 9000.9 respectivelyexcepttosmall Rs.7902.25and Rs. 6927.7 and Veterinary charges was found highestRs.2664.5 and 3493.05,andRs. 2540.4 and Rs. 2657.2 for large and medium households,respectivelyandlowestRs.2365.2 andRs. 2467.4for small households. The results revealed overall average cost was Rs. 50519.65 for buffalo(desi) and Rs. 56857.32 for buffaloes(murrah).

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