



ISSN (E): 2277-7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2023; 12(3): 3784-3788
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www.thepharmajournal.com

Received: 05-12-2022

Accepted: 16-01-2023

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Socioeconomic profile of dairy farmers in Chittoor and Vishakhapatnam Districts of Andhra Pradesh

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Abstract

A study on the socioeconomic profiles of dairy farmers was conducted in Chittoor and Vishakhapatnam districts of Andhra Pradesh. Dairy farming affects farmers' social and economic well-being. The present study also explores the milk production and milk utilization pattern. The sample households were 4.82 members, with 73.41% adult and 26.59% children. Only 7.50 percent of the household heads had completed higher secondary education, 30% had only completed primary school, and 15% were illiterate. Dairy was the most common occupation among the sample households (46.25%), followed by farming (38.75%). The average operational land holding was 3.94 acres and 1.12 acres of that was planted as fodder crops. When compared to buffaloes and local cows, cross-bred cows are more prevalent in the study area. The overall average milk yield was found to be highest in crossbred cows (10.76 lit/day), followed by buffaloes (8.50 lit/day), and indigenous cows (5.84lit/day). The most milk was consumed on farms in the form of liquid milk (61.72%), and rest is converted to curd (25.40%), and ghee (12.88%) respectively.

Keywords: socio-economic profile, milk production, dairy farming, utilization pattern

1. Introduction

India is an agrarian society with animal husbandry as the backbone of the national economy. Dairy enterprise is an important part of the Indian economy, providing continuous income, improving dietary standards, and reducing unemployment. Studies suggest that dairying has the potential to improve the socioeconomic status of rural populations and the rural economy (Mahesh *et al.*, 2020) [2]. Dairy farming is an important part of the village economy, providing a sustainable food source for landless and poor people and also providing employment to women. (Pandey V.N. and Pathak A., 1997, Khan *et al.*, 2014; Manish S. and Tanaka H., 2007) [3, 5, 4].

Due to Operation Flood, it is now more crucial than ever for rural farmers to recognize the potential of dairy farming as a source of extra income and employment. The growing demand for milk and dairy products has caused dairy farming to expand quickly, and the rural poor now view it as their most lucrative business. However, several obstacles, including those related to production and marketing, have made it difficult for entrepreneurs to enter and succeed in this industry (Mallu B Deshetti and M Y Teggi, 2017) [1].

Andhra Pradesh is an agricultural state with potential for milk production, with a buffalo population of 64.64 lakh and 8th in cattle holdings. Milk production in Andhra Pradesh has increased to 137.25 lakh tonnes (LT) with an annual growth rate of above 7%. The five districts of Krishna, Prakasam, Guntur, Chittoor, and East Godavari produce about half of the total milk production. The livestock sector contributes 26 percent of the state's Agricultural GDP and there is a vast network of dairy co-operative societies with a membership of 8 lakh people.

Particularly in the rural sector, dairy farming has significantly contributed to socio-economic uplift and the creation of jobs for landless small farmers, marginal farmers, and farm women. To better understand the socioeconomic characteristics of dairy farmers and the degree of adaptation of dairy management practices, this study was carried out.

2. Methodology

The primary data was collected from the randomly selected 80 households from four villages selected from Chittoor and Vishakhapatnam districts of Andhra Pradesh. The randomly selected 80 households were stratified into three categories based on Standard Animal Units (SAUs) by using cumulative square root frequency method.

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Thus, the total sample has been stratified into 36 small herd size category dairy farmers (1-5 SAUs), 27 medium herd size category dairy farmers (6-9 SAUs) and 17 large herd size category dairy farmers (>9 SAUs) using Sirohi *et al.* (2015) [6] approach for the southern region of India.

The primary data was collected from all the sample households by using conventional survey method using well-structured schedule through personal interview. The data pertaining to socio-economic and demographic particulars of households like age, education, family composition, occupation, operational land holding, type of livestock, investment on livestock, milk production and utilization

pattern of milk were collected from respective farmers. Socio-Economic profile, Milk production and milk yield was calculated by using tabular analysis.

3. Results and Discussion

This section discusses the basic socio-economic profiles of sample households, such as family composition, educational status, main and subsidiary occupations, land holdings, herd size composition, feeding pattern of animals and average milk production and yield. Educational status of the households is a key factor in determining the level of production and income of the farmers.

Table 1: Distribution of sample households across herd size categories (Numbers)

Particulars	Herd size category			Overall
	Small (1-5 SAUs)	Medium (6-9 SAUs)	Large (>9 SAU)	
Farms	36 (45.00)	27 (33.45)	17 (21.25)	80 (100)
SAU/Farm	4.16	7.78	11.42	6.93
Milch SAU/Farm	3.62	6.64	9.88	6.71

Figures within parentheses indicate percentage to total 80 sample households

Table 1 indicates total composition of small, medium and large herd size farms in the sample households. Small herd size farmers (45%) of sample size, followed by medium (33.45%) and large farmers (21.75%).

3.1 Average family size and its composition

Table 2. depicts the average family size and its composition across different herd size category. The overall average family size was found to be 4.82 members comprising 73.41 per cent adult and 26.59 per cent children. The category wise comparison reveals that the average family size was observed highest in case of large herd size category (5.13 members), followed by medium (4.86 members) and small herd size category (4.60 members). There is a positive association between average family size and herd size category.

Table 2: Family size composition across herd size (Number of members)

Herd size category	Family size				Total
	Adult (>18 years)		Children (≤18 years)		
	Male	Female	Male	Female	
Small	1.73 (37.68)	1.67 (36.23)	0.83 (18.12)	0.37 (7.97)	4.60 (100)
Medium	1.83 (37.65)	1.66 (34.12)	1 (20.59)	0.37 (7.65)	4.86 (100)
Large	1.87 (36.36)	1.87 (36.36)	0.67 (12.99)	0.73 (14.29)	5.13 (100)
Overall	1.81 (37.53)	1.73 (35.88)	0.83 (17.28)	0.45 (9.30)	4.82 (100)

Figures within parentheses indicate percentage of total family size

3.2 Education status of the head of the sample households

Education is believed to be the facilitating factor in realizing higher performance in dairy enterprise. Education have a significant impact on the decision-making capacity of different activities, such as the marketing of products, diversification of the farm and the level of profit. It also helps in dairying for better management of inputs as well as marketing of milk and milk products. Table 3 depicts that 15

percent of the sample household heads were illiterate, 30 percent had primary school level education, 27.50 percent had studied up to secondary level, 20 percent completed higher secondary standard and only 7.50 percent household heads were found to be educated up to graduation or above. Hence is evident that a majority of the sampled households head were educated up to primary level.

Table 3: Education status of head of the sample households across herd size (Frequency)

Education level	Educational score Assigned	Herd size category			Overall
		Small (1-5 SAUs)	Medium (6-9 SAUs)	Large (>9 SAU)	
Illiterate	0	5 (14.75)	3 (10.00)	4 (25.00)	12 (15.00)
Primary	1	13 (38.24)	7 (23.33)	4 (25.00)	24 (30.00)
Secondary	2	9 (26.47)	11 (36.67)	2 (12.50)	22 (27.50)
Higher secondary	3	6 (17.65)	6 (20.00)	4 (25.00)	16 (20.00)
Graduation & above	4	1 (2.94)	3 (10.00)	2 (12.50)	6 (7.50)
	Total	34 (100)	30 (100)	16 (100)	80 (100)

Figures within parentheses indicate percentage of total educational score

3.4 Occupation status of the sample households

The occupation status of the sample households is considered to be useful for analyzing the extent of adoption of dairy farming as a main or subsidiary occupation in the study area. Table 4 provides the information regarding the occupational status of the sample households. Dairy was found to be the major occupation among the sample households (46.25%) followed by farming adopted by a significant proportion of the sample households (38.75%) Some farmers have also adopted business (8.75%) and services (1.25%) as their major occupations.

Table 4: Occupation status of sample households (Numbers)

Occupation	Particulars	Herd size category			
		Small	Medium	Large	Overall
Main	Agriculture	12 (52.17)	9 (37.50)	10 (30.30)	31 (38.75)
	Dairy	9 (39.13)	11 (45.83)	17 (51.52)	37 (46.25)
	Agricultural labour	0 (0.00)	1 (4.17)	0 (0.00)	1 (1.25)
	Business	1 (4.35)	2 (8.33)	4 (12.12)	7 (8.75)
	Rural artisans	1 (4.35)	0 (0.00)	1 (3.03)	2 (2.50)
	Services	0 (0.00)	0 (0.00)	1 (3.03)	1 (1.25)
	Others	0 (0.00)	1 (4.17)	0 (0.00)	1 (1.25)
	Total	23 (100.00)	24 (100.00)	33 (100.00)	80 (100.00)
	Subsidiary	Agriculture	7 (35.00)	8 (32.00)	10 (28.57)
Dairy		11 (55.00)	11 (44.00)	11 (31.43)	33 (41.25)
Agricultural labour		2 (10.00)	2 (8.00)	4 (11.43)	8 (10.00)
Business		0 (0.00)	2 (8.00)	4 (11.43)	6 (7.50)
Rural artisans		0 (0.00)	0 (0.00)	3 (8.57)	3 (3.75)
Services		0 (0.00)	2 (8.00)	2 (5.71)	4 (5.00)
Others		0 (0.00)	0 (0.00)	1 (2.86)	1 (1.25)
Total		20 (100.00)	25 (100.00)	35 (100.00)	80 (100.00)

Figures within parentheses indicate percentage of the colour total

3.5 Average size of operational land holding

Land is the basic resource determining the livelihood status and socio-economic progress of the farmer. The Fig 1 depicts the average operational land holdings and area under different

fodder crops of sample households across the herd size categories in the study area.

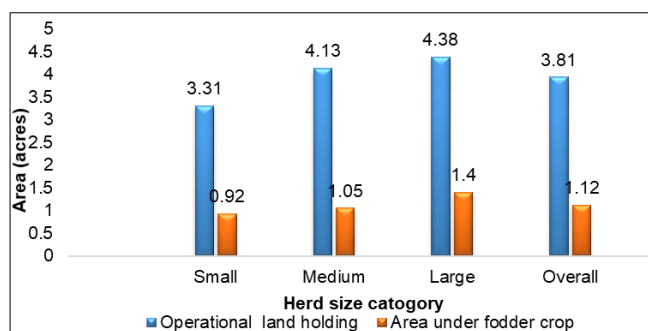


Fig 1: Average land holding and area under fodder crops across herd size

As shown in the Fig. 1, the on an average overall operational land holding was 3.94 acres while area under fodder crops was found to be 1.12 acres. The average operational land holding was also higher for the large category of dairy farmers (4.38 acres), followed by medium dairy farmers (4.13 acres) and small dairy farmers (3.31 acres), respectively. The area under fodder crops was also found to be highest in case of large herd sizes (1.4 acres), followed by medium herd sizes (1.05 acres) and it was least for small herd size category (0.95 acres). Both the operational land holding and area under fodder crops were observed to varying positively across the herd sizes. This is due to the fact that with increase in the operational land holdings, farmers tend to bring more area under various fodder crops in order to increase the fodder yield and to cut down the variable cost of production

3.6 Composition of Dairy Herd

The strength of herd and the number of milch animals consist of comprises of local cow, crossbred cow and Buffaloes. The cattle population consist of milch animals, heifers, calves below 1-year age and calves between 1 to 2 years' age (Table 5).

Table 5: Herd composition by groups across herd size categories

Animal type	Herd Size category	Milch	Heifer	Calf		Total
				(≤1 year)	(≥ 1 year)	
Local cow	Small	19	2	4	2	27
		70.37	7.41	14.81	7.41	100
	Medium	36.00	3.00	10.00	6.00	55
		65.45	5.45	18.18	10.91	100
	Large	25.00	2.00	8.00	4.00	39
		64.10	5.13	20.51	10.26	100
	Overall	80.00	7.00	22.00	12.00	121
		66.12	5.79	18.18	9.92	100
Crossbred cow (Holstein Friesian and jersey)	Small	55.00	2.00	23.00	7.00	87
		63.22	2.30	26.44	8.05	100.00
	Medium	79.00	4.00	24.00	7.00	114
		69.30	3.51	21.05	6.14	100.00
	Large	61.00	3.00	22.00	7.00	93
		65.59	3.23	23.66	7.53	100.00
	Overall	195.00	9.00	69.00	21.00	294
		66.33	3.06	23.47	7.14	100.00
Buffalo (Murrah)	Small	14.00	0.00	0.00	1.00	15
		93.33	0.00	0.00	6.67	100.00
	Medium	30.00	0.00	8.00	4.00	42
		71.43	0.00	19.05	9.52	100.00
	Large	21.00	2.00	9.00	0.00	32
		65.63	6.25	28.13	0.00	100.00
	Overall	65.00	2.00	17.00	5.00	89
		73.03	2.25	19.10	5.62	100.00

Figures in parenthesis indicate per cent of row total

The Table 5 shows the herd composition across different herd size categories of study area. It was found that total number of milch crossbred cow was 195 (66.33 per cent) Similarly, the total milch local cows was observed to be 80 (60.20 per cent) and 27 (66.12 per cent). The total milch buffaloes was found to be 65 (73.03 per cent). In the study area population of cross breed cows are more compared to buffaloes and local cows.

3.7 Average milk yield

Average Milk productivity of the animals across different herd size categories for indigenous cow, crossbred cow and buffalo are shown in Fig 2. The overall average milk yield was found to be highest in case of crossbred at 10.76 litres per

day followed by 8.50 litres per day in case of buffaloes and it was least for indigenous cows at 5.84 litres per day. Milk productivity was found to be positively associated with the herd sizes. Higher yield in case of large herd size category was mainly due two reasons. First, the large herd size category farmers are resource rich, as they are having comparatively higher acreage of land, and adoption of better feeding and management practices in order to obtain higher returns. Second, economies of scale. High productivity of crossbred cow could be attributed to the factors like better performing breeds (Holstein Friesian and crossbred Jersey *etc.*), scientific management practices (Fig 2).

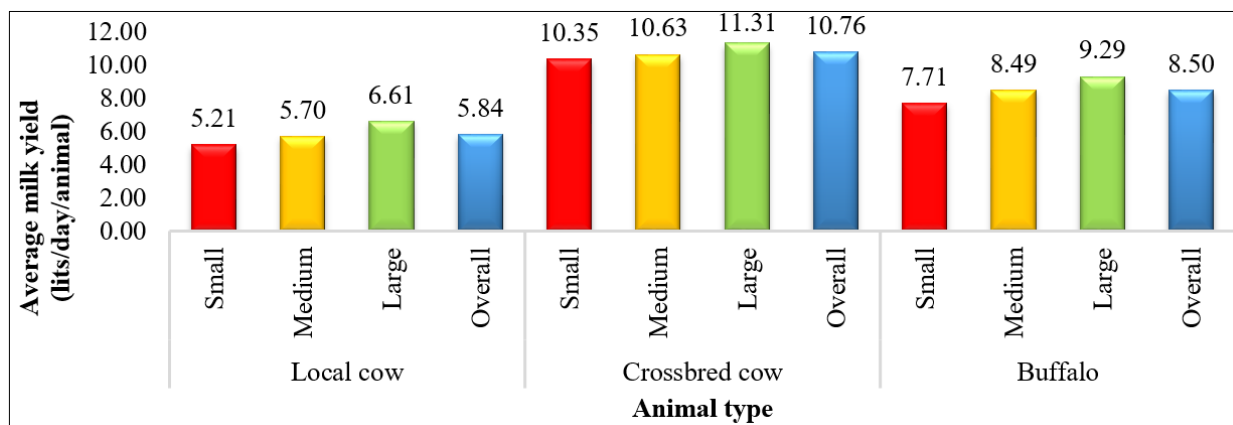


Fig 2: Average productivity of milch animals (litres/animal/day)

3.8 Feeding pattern of milch animals

The quantity of different types of feed and fodder fed to the animals according to herd size category is presented in Table 6. Berseem and maize crops were found to be a prominent source of green fodder in the study area, supplemented by dry

fodder such as paddy straw and wheat straw, as well as concentrates like paddy husk, rice bran, wheat bran and groundnut cake. Milk union provided balanced feeds like Visakha Gold and Goudhra-Shakti, and dual feeding practices such as grazing and stall feeding were observed.

Table 6: Average quantity of feed and fodder fed to the animals (Kg/animal/day)

Feed and fodder	Animal type	Herd size category			
		Small	Medium	Large	Overall
Green fodder (Napiergrass, jower, berseem and maize)	Local cow	13.56	14.30	15.95	14.60
	Crossbred	19.15	19.61	21.01	19.92
	Buffalo	20.72	22.84	24.80	22.79
Dry fodder (Wheat straw and paddy straw)	Local cow	4.26	4.53	4.90	4.56
	Crossbred	4.67	5.00	5.45	5.04
	Buffalo	4.77	5.27	5.58	5.21
Concentrate (Grains, pulse husks, rice bran) Visakha Gold and Goudhra- shakti	Local cow	2.48	2.68	3.16	2.77
	Crossbred	3.08	3.78	3.94	3.60
	Buffalo	3.59	3.90	4.38	3.96

In terms of quantity, green fodder comprised the major portion of feed and fodder, followed by dry fodder and concentrates across all three categories of animals. This is due to the fact that green fodder and dry fodder provide 65-70 per cent of the dry matter in animal feed. The overall daily intake of green fodder was found to be highest in case of buffalo (22.79 kg), followed by crossbred (19.92 kg) and indigenous cow (14.60 kg), respectively. The overall intake of dry fodder was found to be varying from 4.56 kg in case of indigenous cows to 5.04 kg in crossbreds and 5.21 kg for buffalo. The overall quantity of concentrates consumed was highest in case

of buffalo (3.96 kg) followed by crossbred (3.6 kg) and lowest in indigenous cow (2.77kg). The quantity of feed and fodder fed to the animals was found to be increased with herd size.

3.9 Utilization pattern of milk by the producer households

Milk produced by the dairy farmers were observed to be utilized as liquid milk or they converted it into various milk products like curd and ghee. The milk products produced by the farmers were found to meet the family consumption requirements only.

Table 7: Utilization pattern of milk by producer households (litre/household/day)

Particulars	Small	Medium	Large	Overall
Average milk production (lit/day)	21.56	21.56	61.77	39.07
Total milk retained at household	2.50	2.63	3.02	2.72
Liquid milk consumed	1.55 (62.00)	1.63 (61.98)	1.85 (61.26)	1.68 (61.72)
Milk converted into products				
1. Curd	0.65 (26.00)	0.67 (25.48)	0.75 (24.83)	0.69 (25.40)
2. Ghee	0.30 (12.00)	0.33 (12.55)	0.42 (13.91)	0.35 (12.88)

Figures in parenthesis indicate per cent of row total

Table 7 represents the average on farm utilization pattern of milk and the proportions of milk and milk products in total family consumption requirements. The table 7 shows that the average milk production for small, medium, and large herd sizes was 21.56, 48.13, and 61.77 litres/farm/day, respectively, and the overall average milk production was 39.07 litres/farm/day. Overall on farm utilization of milk was found to be highest in the form of liquid milk (61.72%), followed by curd (25.40%), ghee (12.88%), respectively. The utilization of milk as liquid milk was found to be increasing with the herd size varying from 1.55 litre in case of small farmers up to 1.85 litre in case of large farmers due to increase in average family size across the herd size. Utilization of milk for curd preparation was found to be highest in case of large farmers (0.75 litre), followed by medium (0.67litre) and small farmers (0.65 litre). Utilization of milk for ghee preparation was found to be highest in case of large farmers (0.42 litre), followed by medium (0.33litre) and small farmers (0.30 litre).

4. Conclusion

The socioeconomic profile plays a significant role in the dairy business' profitability. The majority of the sampled households head of the study area were educated up to the primary level. In the study area population of crossbreed cows are more compared to buffaloes and local cows. The dairy industry is heavily reliant on milk as it provides the majority of the farmer's income. Milk yield is highest for crossbred cows compared to buffaloes and indigenous cows, while grass fodder is the largest component of feed and fodder. Utilization of milk is highest in the form of liquid milk, followed by curd and ghee respectively. There is a need for proper training programs and facilitation of scientific rearing practices to create awareness of livestock farming, increase the milk productivity of dairy animals, and creation of value addition to the products.

5. References

1. Mallu Deshetti B, Tegg MY. Socio Economic Profile and Constraints Faced by Dairy Farmers in Vijayapur and Bagalakote districts of Karnataka. *Research Journal of Agricultural Sciences*. 2017;8(4):963-966.
2. Mahesh, Manjunath, Amaresh Kumar K, Satishkumar Kale, Umesh Barikar, Sreenivas BV. Socio-economic profile analysis of dairy farmers of Yadgir district of Kalyana Karnataka region. *Journal of Pharmacognosy and Phytochemistry*. 2020;Sp9(4):350-353
3. Pandey VN, Pathak A. Peasants, Subsistence and the Dairy Co-operative in Dry Land: A Fragile Existence, 1997;32(39):98-105.
4. Manish S, Tanaka H. The Impact of Dairy Co-operatives on Women Empowerment- A Case of Kishan Dairy Co-operative in West Bengal, India, Sabaragamuwa

University Journal. 2007;17(1):64-77.

5. Nizamuddin Khan, Ashish Kumar Parashari, Mohd. Sadiq Salman. Role of Dairy Co-Operatives in Socio-Economic Development of Dairy Farmers in Moradabad District: A Case Study. *Research Forum: International Journal of Social Sciences*. 2014;2(1):2348 4411.
6. Sirohi S, Bardhan D, Chand P. Cost and return in milk production: Developing standardised methodology and estimates for various production systems, Project Report of ICAR- National Dairy Research Institute (Deemed University), Karnal submitted to Department of Animal Husbandry, Dairying and Fishery, Ministry of Agriculture and Farmers Welfare, New Delhi, 2015.