A Study on Social and Economic Conditions and Farming Structure of Dairy Farmers in Kerala

Dr. Vijayan P. K[1]; Johnson N. J[2]

[1,2]Associate Professor, PG and Research Department of Commerce and Management Studies,
Sri C Achutha Menon Govt. College, Thrissur, Kerala, India

Abstract: This research investigates the profile of dairy farmers in Kerala, focusing on their socio-economic conditions and dairy farming structure. Using a descriptive research design, the study collected data from 384 dairy farmers across three leading milk-producing districts in Kerala, India. Respondents in the cooperative system were chosen using a multistage random sampling technique, while those in the non-cooperative system were chosen using snowball sampling. For data analysis, the study uses basic statistical tools, such as averages, frequencies, and percentages. The results of the study reveals that in Kerala dairy farming is male dominated and most of them are middle aged. Most of the dairy farmer's educational qualification is matriculation or below. The main occupation of the dairy farmers in Kerala is agriculture that prove the dairy farmers opt dairying as subsidiary occupation. Around 60 per cent of the dairy farmers' monthly income is below 25,000 which prove that the income generated from the dairying activity is meagre. Most of the dairy farmers in Kerala favoured Jersy breed, followed by the Holstein Friesian. Vast majority of dairy farmers in Kerala depend both cooperatives and non-cooperative sector for the purpose of selling their produce. Dairy farmers in Kerala got highest price for their produce if they sell it directly to the consumer and the lowest price is offered by the dairy cooperatives.

Keywords: *Dairy Farmers, Socio-Economic Profile, Dairy Farming Structure, Dairy Cooperatives, Non-Cooperative Sector.*

I. INTRODUCTION

The dairy sector in India is characterized by a large number of smallholder dairy farms. These farms typically have a small herd size, with an average of 2.2 milking cows. Dairying is often practiced as a subsidiary occupation to agriculture, with farmers using available labour and land resources effectively. Milk production is heavily reliant on marginal and small farmers, who collectively contribute a significant portion of the total milk production. In terms of actual number, marginal farmers and landless labourers form the largest group of rural milk producers (Himabindu et al., 2014).

Dairy Farming is a class of agricultural, or more properly, an animal husbandry enterprise, raising female cattle, goats, or certain other lactating livestock for long term production of Milk, which may be either processed on site or transported to a dairy for processing and eventual retail sale (Shinde, 2011). The dairy farming structure of Kerala is characterized by a high degree of local, informal, and smallholder dominance, with a significant role played by cooperative societies. A significant portion of the dairy sector is organized through cooperative societies, which play a vital role in milk procurement, processing, and marketing.

In order to alleviate the problem of unemployment/under-employment and to maintain domestic tranquility, diversification of crop production into non-crop enterprises like dairy farming is of vital importance (Pandey 2000; Alagh 2002). According to Karmakar and Banerjee (2006) dairying has been considered as one of the activities aimed at alleviating the poverty and unemployment especially in the rural areas in the rain-fed and drought-prone regions.

Socio-economic status is a measure of a farmer's social position relative to others which is linked to average standards, material possession, social participation and other factors. Socioeconomic status plays an important role in influencing the adoption of recommended dairying practices and there may have impact on higher technical efficient farming. Evidence suggests that the farm size, education, age, family size, and herd size of cattle were inherently associated with dairy farming position in terms of income generation. The information on the socio-economic characteristics of

farmers would help us gain a better understanding of their influence on the investment in dairying.

The government has acknowledged the dairy industry as one of the economic growth engines. The demand for animal products has increased as a result of factors such as changing lifestyles, rising domestic incomes, urbanisation, and population growth. The government has taken various initiatives to improve the milk production. The successful implementation of this measures normally depend on the attitude of the dairy farmers which is greatly influenced by the socio-economic conditions and the existing dairy farming structure of the farmers. In light of this context, this research undertakes an in-depth examination to reveal the socio-economic conditions and agricultural framework of dairy farmers in Kerala.

II. MATERIALS AND METHODS

Using a descriptive research design, the study collected data from 384 dairy farmers across three leading milk-producing districts in Kerala. Respondents in the cooperative system were chosen using a multistage random sampling technique, while those in the non-cooperative system were chosen using snowball sampling. The gathered data underwent examination through the use of fundamental statistical methods, including averages, frequencies, and percentages.

III. RESULTS AND DISCUSSION

Results of analysis of data collected from 384 dairy farmers rearing cows and buffaloes from three districts of Kerala are discussed here in two heads; one deals with the social and economic conditions of the selected respondents and the other deals with dairy farming structure of the selected dairy farmers.

➤ *Social and Economic Conditions of the dairy farmers in Kerala*
Table 1 below offers an overview of the social and economic attributes of the respondents in the study, including their associated frequencies and percentages.

Table shows that the majority of farmers are male, with 262 males (68.2%) compared to 122 females (31.8%). Dairy farming is a farm activity which involves a full day's dedicated work throughout the year despite of all constraints. This will be the reason for male dominance in the sector. There is a need to give more importance to women farmers in this sector and more schemes are to be implemented to ensure the active involvement of women in this sector. But women farmers alone find it hard to take up this job as it requires a lot of hard labour.

It also shows that very few farmers are in younger farmer (age 18-25) group, with only 5 (1.3%) being small farmers. This suggests that younger generations may not be as involved in farming or are just entering the field. A small portion of farmers are in middle-aged farmer (age 26-40) group, with 30 (7.8%) in total, distributed across small,

medium, and large farms. This suggests that some middle-aged individuals are involved, but they are not the majority. The largest group of farmers is between the ages of 41 and 55, with 45.6% of the total. This age group dominates across all farm sizes, particularly small farms. Another large group is made up of those older than 55, who account for 45.3% of the total. Many of these farmers are likely approaching retirement age, which could affect the future of farming in this population. The majority of farmers are middle-aged or older, with the 41-55 and over 55 age groups together making up over 90% of the farming population. Very few young farmers are represented, which might suggest challenges in attracting younger generations to farming. The aging farmer population and absence of young farmers might raise worries about the long-term sustainability of dairy farming unless efforts are made to inspire younger people to engage in dairying.

It indicates that 75.3% of farmers possess educational qualifications up to the point of matriculation. Only 11.5 per cent of the respondents have plus two, 7.8 per cent of the farmers are graduated and only 2.3 per cent are post graduated. And 2.4 per cent have B. Tech or Diploma as their educational qualification. The reason behind is that, most of the dairy farmers are aged and middle aged and it is difficult for them to get access to higher education at that time. The achievement of education is very important for upgrading higher sustainability in the socio- economic well-being of the dairy farmers.

The majority of farmers (76.3%) own small farms, reflecting that smaller-scale farming is the most common type.18.8% of the total are medium-sized farm owners. This middle segment is smaller than the small farmers, but it still constitutes nearly one-fifth of all farmers. Only 4.9% of the farmers own large farms, showing that large-scale farming is relatively rare in this population.

The table reveals that 52.1 percent of the farmers' main occupation is agriculture. Only 32.0 percent of the respondents engaged in dairying as their main activity. 2.6 per cent of the respondents have private job and another 2.6 per cent have government job and 7.3 per cent are self-employed and 3.4 per cent are coolies. This table also reveals that majority of those who engaged in agriculture prefer to do dairying as their subsidiary activity. The major reason behind this will be the availability of fodder etc at free of cost.

The table explains that 270 respondents out of 384 prefer dairying as their subsidiary occupation. This reveals that 70.3 percent of the people in Kerala prefer dairying as their subsidiary occupation along with other main occupation. Out of the total respondents engaged in dairying as the main occupation, 27.1 per cent engaged in agriculture as their subsidiary occupation.

According to the table, 59.6% of the respondents make less than Rs.25,000 per month. 25.8 per cent of the respondent household's income lies in between 25,000 to 50,000 and 8.9 per cent of the respondents have income is between 50,000 to 75,000 and 3.4 per cent have income between 75,000 to 1,00,000 and only 2.5 per cent have

income above 1,00,000. The majority of farmers are in the lower-income group, which replicates the dairy sector's

challenges, including low productivity and profitability due to various constraints.

Table 1 Social and Economic Conditions of the Respondent milk Producers

	Variable	Categories	Number	Percentage		Variable	Categories	Number	Percentage
1	Gender	Male	262	68.2	5	Main Occupation	Agriculture	200	52.1
		Female	122	31.8			Dairying	123	32
		Total	**384**	**100**			Govt. Job	10	2.6
2	Age	18-25	5	1.3			Private Job	10	2.6
		25-40	30	7.8			Self Employed	28	7.3
		40-55	175	45.6			Cooli	13	3.4
		>55	174	45.3			**Total**	**384**	**100**
		Total	**384**	**100**	6	Subsidiary Occupation	Agriculture	104	27.1
3	Education	SSLC &Below	289	75.2			Dairying	270	70.3
		Plus Two	44	11.5			Self employed	4	1.0
		Graduation	30	7.8			Coolie	6	1.6
		PG	9	2.3			**Total**	**384**	**100**
		Others	12	3.2	7	Monthly house hold income	<25000	229	59.6
		Total	**384**	**100**			25000-50000	99	25.8
4	Farm size farmer classification	Small	293	76.3			50000-75000	34	8.9
		Medium	72	18.8			75000-100000	13	3.4
		Large	19	4.9			>100000	9	2.4
		Total	**384**	**100**			Total	384	100

IV. DAIRY FARMING STRUCTURE

Table 2 given below narrate a detailed information about the breed the farmers rearing and their yield and lactation period and various marketing channels used by the respondent farmers with the price received from the selected channel.

The table exhibits the total number of milking cows and buffaloes maintained by the sample farmers under various breeds in the study period. Jersy cows are large in number (291) followed by Holstein Friesian (180) other cows (60) Brown Swiss (32) and Sindhi (9). Number of buffaloes are very small in number (5). More than half of the milking cows owned by the dairy farmers in the study area is Jersey followed by the Holstein Friesian. The preference of the farmers towards the breed Jersey definitely be the high fat content of the milk which is the normal criteria used for pricing the milk by the dairy cooperatives. Holstein Friesian is preferred due the high yield of that breed. The least preferred breed of cattle is Sindhi (1.6%). Only 0.8 per cent of the respondent farmers are rearing buffalo for milk production which is conformed to the general state of composition of different types milking animals in the state of Kerala.

It also explains the lactation period of various breeds of cows and buffaloes. From the table we can say that Holstein Friesian cows have the longest lactation period (mean 11.85) which is followed by Jersy (mean 10.67) and other cows (mean 10.31). Murrah Buffalo, the only breed seen in the sample area, have the shortest lactation period (Mean 8.00). The information about the lactation period of the cattle of the sample area is the same that of the general trend in Kerala about the lactation period of various breed of cattle.

It reveals that the highest yield is from the Jersey cows (23.50), that is why majority of the famers prefer this breed. The second highest yielding breed is Holstein Friesian (21.81) followed by Brown Swiss (16.47) and other cows (16.22). The Sindhi cows' yield is the lowest. The average yield of Murrah buffalo, the only breed seen in the study area, is 7.6 per day.

The table shows that only a small portion of farmers (10.7%) rely solely on cooperatives to market their milk. A larger group (26.6%) uses only non-cooperative channels, which might indicate a preference for traditional or direct sales methods. The majority (62.7%) use both cooperative and non-cooperative channels, suggesting that many farmers

are diversifying their marketing strategies to maximize sales and revenue.

The table also exhibits the price received by the farmers for a litre of milk from various channels of distribution. The highest price received by the farmers is from the sale through home delivery (Mean 60.71) followed by the sale of milk directly to the consumers (Mean 60.51). The average price received from the sale to dairy cooperatives is only Rs.45.34.

This is the lowest price offered by the channel opted by the farmers in the study area. The average price received through shops and hotels is Rs.56.83 and from local vendors it is Rs.55 and from private dairies it only Rs.50. As the price is the important factor that influenced the dairy farmers in the channel selection, the dairy cooperatives have to increase the procurement price paid to the farmers by reducing the marketing cost of by increasing the profitability of the Union by diversifying the product they marketed.

Table 2 Dairy Farming Structure of Respondent Milk Producers

	Variable	Categories	Number	Percentage		Channels	Number
1	Milking cattle breed owned	Brown Swiss	32	5.6	Marketing Channel Selected	Cooperative	41
		Holstein Friesian	180	31.2			
		Jersy	291	50.4		Non-Co-operative	102
		Sindi	9	1.6			
		Other	60	10.4		Both	241
		Murrah Buffalo	5	0.8			
		Total	577	100		Total	384

	Categories	Lactation Period	Average milk yield per day	Percentage number of milk animals
2	Brown Swiss	9.84	16.47	5.6
	Holstein Friesian	11.85	21.81	31.2
	Jersey	10.97	23.5	50.4
	Sindy	8.69	10.09	1.6
	Other	10.31	16.22	10.4
	Murrah Buffalo	8	7.6	0.8

	Marketing Channels	Average Price Received	Percentage of farmers using the channels
3	Direct to consumers	60.51	33.28
	Cooperatives	45.34	43.05
	Local Vendors	55	1.22
	Private Dairies	50	0.15
	Shops/Hotels	57	2.90
	Home Delivery	60.71	19.39

V. CONCLUSION

Using a descriptive research design, the study collected data from 384 dairy farmers across three leading milk-producing districts in Kerala. The finding indicates that in Kerala dairy farming is male dominated and most of them are middle aged. Most of the dairy farmers' educational level is low and they opt dairying a subsidiary occupation along with agriculture. Most of them lies in low income which prove

that the income generated from the dairying activity is meagre. Most of the dairy farmers in Kerala owned Jersy breed and they depend both cooperatives and non-cooperative sector for the purpose of selling their produce. Dairy farmers in Kerala got highest price for their produce if they sell it directly to the consumer and the lowest price is offered by the dairy cooperatives. This requires utmost care and attention on the part of policy makers.

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