Milk marketing strategies adopted by dairy farmers: A study of Ernakulam district

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Abstract— *Various studies and reports expect that due to great potential and increased demand on consumer's side, dairy market in Kerala will grow at a CAGR of 15.7 percent during 2021-2026. But the reality and projection are quite different. Due to the involvement of many factors like lack of infrastructure facilities, transportation, interference of intermediaries, less bargaining capacity and lack of knowledge about the marketing conditions Kerala's milk marketing is facing a huge challenges and constraints. Recent studies found that more than 70 percent of milk is sold to dairy cooperative society which implies that a traditional marketing channel dominates in Kerala. In this study, Ernakulam district have chosen. Ernakulam, which has over 330 co-operative societies of Milma in the district, faces a shortage of 70,000 litres per day. This gap is met by importing milk from Tamil Nadu and Karnataka. It indicates that there is a huge scope for dairy market in Ernakulam due to the steady increase in demand on consumer's side. But recent studies reveal that the existing marketing conditions are not favourable to farmers. Therefore, in this context, the marketing strategy adopted, various milk marketing channels, the reasons for choosing, price received and quantity of milk sold to these stakeholders/channels on the producer's side to be studied in detail. All these aspects are covered under this study. Present study tries to help the government and concerned department in taking appropriate actions for boosting the milk market in Ernakulam district by giving equal importance to both production and marketing side.*

Keywords— Consumer, Distribution channels, Marketing, Milk, Producer.

I. INTRODUCTION

The International Market Analysis Research and Consulting Group' (IMARC Group) latest report, titled "Dairy Industry in Kerala: Market Size, Growth, Prices, use segments, Cooperatives, Private Dairies, Procurement and Distribution", offers an in-depth analysis of the Kerala dairy market. In 2020, the milk production in Kerala reached a volume of 2.5 billion litres. The state currently represents the twelfth largest dairy market in India (IMARC, 2020). According to the report, Kerala dairy market exhibited strong growth during 2015-2020 and dairy market grew at a CAGR of 13 percent during 2014-2019. In Kerala, milk has become the biggest product segment. Like milk, other by products such as frozen/flavoured yoghurt, cheeses, Ultra High Temperature (UHT) milk, flavoured milk and butter milk also have the scope of growing market. As per IMARC dairy market of Kerala will continue its growth in the coming years. In Kerala, Milma is the major contributor of milk and milk products. Besides Milma other cooperatives like People's Dairy Development Project (PDDP) Central Society, Jeeva Milk etc. have significant contribution in Kerala's dairy market. IMARC Group expects that Kerala dairy market will grow at a CAGR of 15.7 percent during 2021-26(IMARC, 2020).

Due to the involvement of many factors like lack of infrastructure facilities, transportation, interference of intermediaries, less bargaining capacity and lack of knowledge about the marketing conditions Kerala's milk marketing is facing a huge challenges and constraints. As a result, many of the farmers could not find market for their products which creates pricing issues and thereby lowering profit. Proper marketing strategies are essential for the better and successful running of dairy farms. There are many forms of marketing channels like consumers/households, cooperative society and intermediaries in Kerala. Farmers adopts various kinds of marketing strategies like direct marketing, marketing through intermediaries, marketing through advertisement based on their objectives and goals.

In this study, Ernakulam district have chosen. Ernakulam, which has over 330 co-operative societies of Milma in the district, faces a shortage of 70,000 litres per day. This gap is met by importing milk from Tamil Nadu and Karnataka. It indicates that there is a huge scope for dairy market in Ernakulam due to the steady increase in demand on consumer's side. Therefore, in this context, main purpose of this paper is to explain the various forms of marketing/distribution channels and the marketing strategies adopted by the dairy farmers in Ernakulam district. This paper has been divided into two parts. First part deal with the marketing strategies adopted by the farmers and second part explains the quantity of milk sold to and price received at dairy cooperative society and to local market. In this section detailed analysis of various agents/marketing channels and the reason for choosing them have been done.

II. REVIEW OF RELATED STUDIES

In the paper Rajendran et al (2004) reviewed the existing status of milk marketing and dairy cooperatives in India and also provide the recommendations to meet the future challenges. In the study, they found that more than 80 percent of milk is marketed through unorganized sector and less than 20 percent is marketed through organized sector. The paper suggests that by changing the dairy cooperatives laws and regulations we can reduce the role of unorganized sector in marketing. They also recommend that by strengthening the dairy cooperatives we can overcome the challenges in milk marketing like quality of the product, product development, infrastructure development and global marketing. In the paper, Sharma (2015) analysed determinants of market channel choices of small milk producers based on farm household survey. In this paper impact of various market channel choices on farmers' income and technology adoption has been analysed. The study has found that though there has been emerging milk marketing channels, the traditional sector still dominates. Farmers sell nearly 70 per cent of their milk to traditional marketing/distribution channels. It indicated that small dairy farmers are not excluded from the cooperatives but are excluded from the modern private sector. Nilabja et al (2017) did not find milk production commercially profitable in many cases. Paper also suggests that despite the white revolution, milk production still remains largely a subsistence activity. There are, however, large variations in milk price, animal stock, and profit among regions; urbanisation levels of districts; and main occupations of producers. The results also reveal that the producer's remuneration varies with the uses of different marketing channels. While informal traders still dominate the market, the sign of entry of private corporate buyers is also clear. In the study, Anjani Kumar et al (2018) shows that in India the dominance of smallholders in milk production is increasing. The average milk production of household is found to be directly proportional to the farm size. This study also investigates whether there is any systematic bias against the participation of poor smallholders in organized milk marketing outlets. It is found that farmers with access to institutional credit are more likely to sell their output through formal milk marketing channels like processors and cooperatives and government agencies. This paper also suggest that incentives should be provided to attract smallholders, women, and under privileged sections of the rural Indian society.

Dinesh & Singh (2017) in their study found that far more serious treatment and a more comprehensive approach are required for analysing the interaction between crop and livestock production system, gainful employment of surplus family labour and also examine the reason for rearing milch animals in gaining family nutrition. In the paper, Saravanadurai and Muthuraj (2018) has examined the role of cooperatives in dairy sector and explored constraints such cooperatives face in the successful functioning in the form of lack of professionalism in management, lack of good leadership and improper government control. This paper suggests that this sector require scientific management, value addition for the dairy products, and customer services for ensuring better performance of milk cooperatives in rural India and bringing the inclusive growth in Indian economy.

III. OBJECTIVES

Main objectives of the study are

1) To analyse the marketing strategies adopted by the farmers in Ernakulam district
2) To examine quantity of milk sold to various agents/marketing channels and to explore various reasons for choosing them.

IV. SIGNIFICANCE OF THE STUDY

The study, 'Development and testing of potential indicators for evaluation of dairy production systems', published in the Indian Journal of Animal Sciences, ranked the states on the basis of six major indicators of dairy production. Kerala stood first in three categories- animal breeding, resource availability and policies and regulations. The state was placed second in veterinary infrastructure; seventh in dairy production and eighth in value addition and marketing (The Hindu, 2020). Currently, Kerala represents the 12^{th} largest dairy market at the national level. It indicates that Kerala has the great potential

in dairy sector since there is huge market for the product due to the growing demand. In this study, Ernakulam district have chosen due to various reasons. In terms of milk production, Ernakulam stands seventh position whereas its demand for milk is growing rapidly than others due to the influence of consumers who live in cities/ towns. Ernakulam district faces a shortage of 70,000 litres of milk per day. Despite the intervention of the government by seeking help from the Tamil Nadu Co-operative Milk Producers' Federation, dairy experts wonder if the gap can be bridged (New Indian Express, 2020). It indicates that there is a huge scope for dairy market in Ernakulam due to the steady increase in demand on consumer's side. Therefore, on the producer's side, the marketing strategy adopted, various milk marketing channels, the reasons for choosing and quantity of milk sells to these stakeholders/channels to be studied in detail. All these aspects are covered under this study.

V. MATERIALS AND METHODS

Present study used both primary data and secondary data. Primary data was collected from 320 dairy farmers in Ernakulam district with the help of pre tested structured interview schedule. Primary data were collected to examine the milk marketing strategies and channels adopted by dairy farmers in Ernakulam district. Multi stage random sampling method was used in the study. Secondary data were collected from reports of various departments of state government. Descriptive statistics like frequency distribution, percentages, proportion and mean were also used to analyse the data.

VI. RESULTS AND DISCUSSION

This section has been divided into two sub sections. They are (i) marketing strategies adopted by the farmers and (ii) marketing/distribution channels and reasons for choosing such channels in Ernakulam district.

6.1 Marketing strategy adopted by dairy farmers in Ernakulam district

Marketing strategies are the long term planning of objectives and goals that the entrepreneur want to achieve. Dairy farm as an enterprise also follows some goals like expand farms by capturing huge market for product/increased sale and obtain higher price and higher profit. In order to achieve these objectives, it is very essential to choose the appropriate marketing strategies. Therefore, every farmer tries to utilize the available opportunities to find markets and increased sale for their output. Sale of milk and milk products through right and proper channels is the major concern of dairy farmers. A strategy adopted by farmers includes direct marketing, personal contact strategy and marketing through intermediaries/middlemen. All these are explained in detail below. Table 1 show the distribution of farmers who follow marketing strategy of direct marketing, personal contact strategy and marketing through intermediaries/middlemen.

6.1.1 Direct marketing strategy

Main strategy adopted by farmers is the direct marketing. Direct marketing is the direct sale of products to different channels like cooperative society, households, middlemen and hotels /shops. Main advantage of such strategy includes finding of new customers and building of relationships, increased sales, helps in finding the best channels which results in the higher price of product. In the present study direct marketing includes personal and impersonal contact strategy as well.

TABLE 1
MARKETING STRATEGY ADOPTED BY DAIRY FARMERS IN ERNAKULAM DISTRICT

Farm Size*	Direct marketing Strategy		Personal Contact Strategy		Marketing through intermediaries	
	Number of farmers	Percentage	Number of farmers	Percentage	Number of farmers	Percentage
Very small	94	29.4	59	31.1	0	0.0
Small	142	44.4	84	44.2	3	16.7
Medium	44	13.8	26	13.7	2	11.1
Large	11	3.4	7	3.7	2	11.1
Very large	29	9.1	14	7.4	11	61.1
Total	**320**	**100**	**190**	**59.4**	**18**	**5.6**

Source: Primary data

*On the basis of total investment made by farmers, farms have been divided into 5 categories. Very Small (Upto Rs. 500000), Small (Rs. 500001 - Rs. 1000000), Medium (Rs. 1000001 - Rs. 1500000), Large (Rs. 1500001 - Rs. 2000000), Very Large (Above Rs. 2000000)

From the table it is clear that all the farmers in Ernakulam district adopt direct marketing strategy. In other words, farmers sell milk directly to households and dairy cooperative society.

6.1.2 Personal contact strategy

Second most important strategy adopted by the farmer is personal contact. This strategy involves personal contact by meeting or communicating with someone regularly. In other words, farmers sell milk and milk products to different channels like cooperative society, households and hotels/shops on the basis of acquaintance with them. They may be friends, relatives, neighbours or familiar persons. Therefore, farmer can ensure some customers throughout the period. This is the main advantage of choosing this strategy. It is a part of direct marketing strategy which includes the number of farmers who sells milk to various market channels on the basis of personal knowledge or information about them. This is personal contact strategy adopted by farmers in the marketing of milk. Table 1 show the distribution of farmers who chose personal contact strategy. From the table it is clear that out of 320 farmers, 59.4 percent of farmers follow personal contact strategy to sale milk. Across different farm size, out of 190 farmers who adopt personal contact strategy, 44.2 percent are small farmers followed by very small with 31.1 percent. Only 3.7 percent of large farmers adopt personal contact strategy.

6.1.3 Marketing through intermediaries

Another important strategy adopted by the farmers is marketing through intermediaries. Generally, intermediaries are also known as middlemen. They are traders of different products try to explore and create market opportunities in order to make more profit. Middlemen act as a distributor of many products and try to reduce the gap between producer and consumer. They are like traditional middlemen who pick up the bulk amount of milk from the farmers and directly sell to consumers, hotels or restaurants and take a margin on the milk while selling.

But a very few farmers approach middlemen even though they get higher price. It is due to the unawareness and unavailability of the information on middlemen. Some farmers are less confident about them. Table 1 show the distribution of farmers who opted intermediaries for selling milk. It is found from the table that only a few farmers marketing milk through intermediaries/middlemen. Out of 320 farmers, only 5.6 percent sell milk to middlemen. Out of 18 farmers who market milk through intermediaries, 61.1 percent are very large farms. Reason for low percent of farmers who adopt middlemen for marketing milk is found from the survey that firstly, they have less confidence on them. Secondly, they do not have much network facilities to reach the reliable intermediaries.

6.1.4 Sale of packed and unpacked milk

Farmers sell either packed milk or unpacked or both. They sell packed or unpacked milk on the basis of the preference of households. On the customers side, some prefer packed and some prefer unpacked milk. Normally unpacked milk is bought by some customers because unpacked milk is comparatively cheaper than packed milk. Major reason for preferring unpacked milk by customers is that farmers are nearby and easily can deliver at the doorstep with no additional cost. Major preference for packed milk is from the customers who live in cities or town areas of Ernakulam. Because packed milk ensure quality, availability, hygenity, fat content and easiness to store to its customers. In the present study by packed milk, we mean milk is packed in either glass bottle or plastic bottle. In other words, it is called as bottled milk.

Table 2 illustrates the preference of customers towards packed and unpacked milk. From the table it is clear that out of 320 farmers, 59.4 percent of farmers sell unpacked milk only and 5.9 percent of farmers sells packed milk only. And 34.7 percent of farmers sell both packed and unpacked milk. Across different farm size, out of 19 farmers who sell packed milk, 31.6 percent of them are very small and small farmers, 15.8 percent are very large farmers and 10.5 percent are medium and large farmers. Out of 190 farmers who sell unpacked milk, 40.5 percent are small farmers, 38.4 percent are very small farmers, 10.5 percent are medium farms, 2.1 percent are large farmers and 8.4 percent are very large farmers. Out of 111 farmers who sell both packed and unpacked milk, 13.5 percent are very small farmers, 53.2 percent are small farmers, 19.8 percent are medium farmers, 4.5 percent are large farmers and 9 percent are very large farmers.

TABLE 2
PACKED/UNPACKED MILK

Size of farm	Packed/ Unpacked	Total	
		Number of farmers	Percentage
Very Small	Packed	6	31.6
	Unpacked	73	38.4
	Both	15	13.5
	Total	94	29.4
Small	Packed	6	31.6
	Unpacked	77	40.5
	Both	59	53.2
	Total	142	44.4
Medium	Packed	2	10.5
	Unpacked	20	10.5
	Both	22	19.8
	Total	44	13.8
Large	Packed	2	10.5
	Unpacked	4	2.1
	Both	5	4.5
	Total	11	3.4
Very Large	Packed	3	15.8
	Unpacked	16	8.4
	Both	10	9.0
	Total	29	9.1
Total	**Packed**	**19**	**5.9**
	Unpacked	**190**	**59.4**
	Both	**111**	**34.7**
	Total	**320**	**100.0**

Source: Primary data

6.2 Milk marketing channel

A marketing channel is the people, organizations, and activities necessary to transfer the ownership of goods from the point of production to the point of consumption. It is the way products get to the end-user, the consumer; and is also known as a distribution channel (Wikipedia). Bowersox and cooper define channel, "as a system of relationship among businesses that participate in the process of buying and selling products and services. It means that channels comprise a number of members each responsible for specific tasks." In order to achieve the goals of any enterprise we require a well organized and well planned marketing strategy. A proper and efficient marketing channel helps in achieving various goals.

There are various kinds of marketing channels in dairy market. The first and foremost requirement of any kind of business or enterprise is large number of consumers for their product. Therefore, in order to attract the customers for making profit or enlarging the market share every seller adopts some sort of marketing strategies like direct marketing and marketing through intermediaries and so on. Marketing channels act as wholesalers or retailers or distributors by providing certain functions like buying products on bulk basis and resale to other customers, direct sales to consumers and distributing the products to various kinds of customers. Therefore, the marketing channels help the producer to extend the market to a wider segment of customers through direct and indirect sale. Figure 1 shows the supply chain of milk. It tells how milk is distributed among various marketing channels.

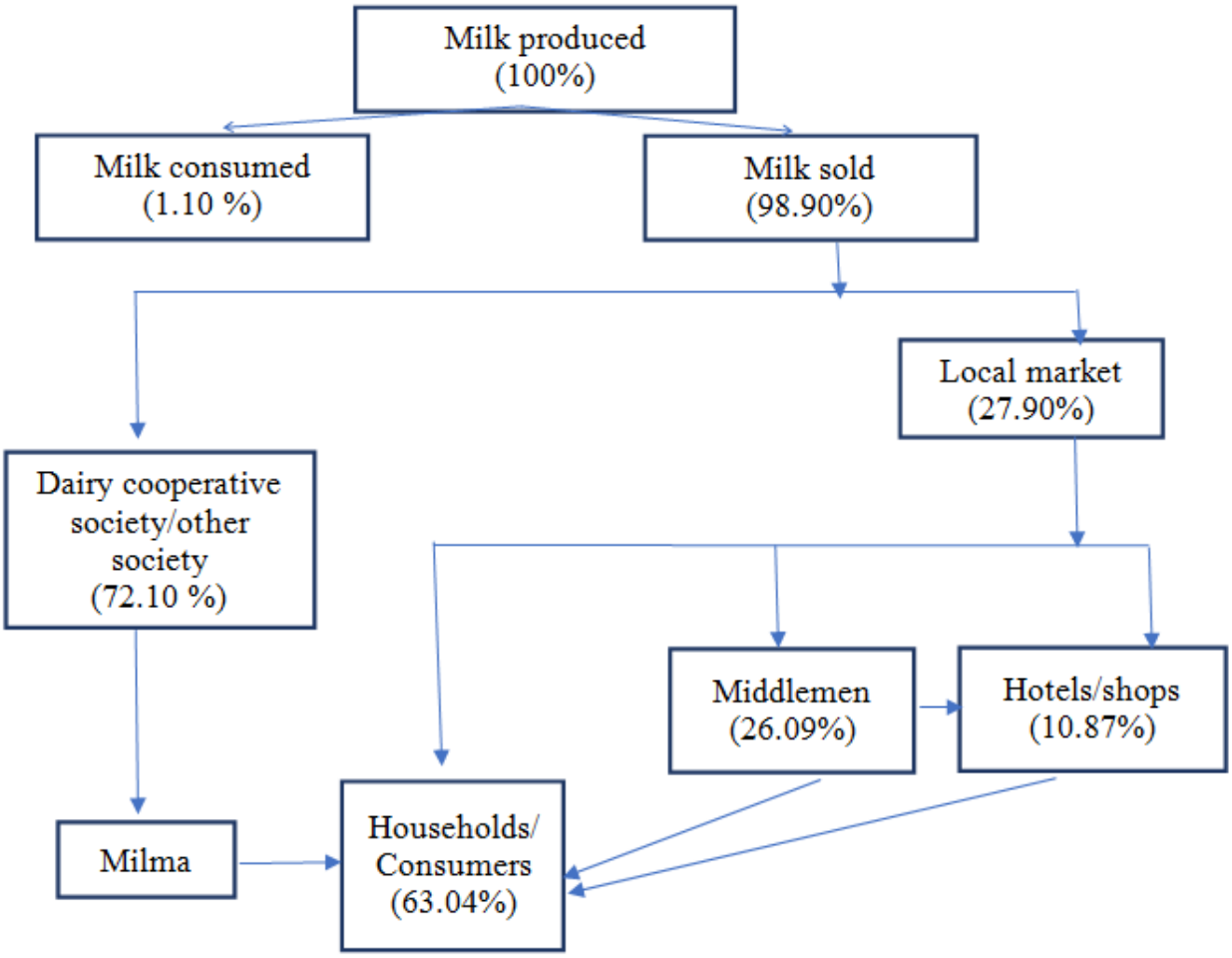

FIGURE 1: Supply chain of Milk
Source: Primary data

Figure 1 show that out of the total quantity of milk produced, 1.10 percent of milk is consumed by the dairy farmer itself and 98.90 percent of total milk produced is sold to various marketing channels such as dairy cooperative society and local market includes consumers/households, hotels/shops and middlemen. Out of the total milk sold, 72.10 percent of milk is sold to dairy cooperative society and remaining 27.90 percent is sold to local market. From the dairy cooperative society some quantity of milk is directly sold to households. Milma has given such provision to each dairy cooperative society for earning additional revenue in order to meet the daily expense of cooperative society. Milma collects remaining milk and processed in corresponding regional dairy plant and distribute milk in different qualities. When milk is sold to local market, (i) directly purchase by consumers/households (ii) sell to middlemen who sell a portion of milk to consumers/households or to shops again purchased by consumers and (iii) sell to hotels/shops, restaurant and hotels purchase a portion and remaining portion is sold to shops, then milk is purchased by consumers from the shops. From the figure it is clear that out of total quantity of milk sol to local market, 63.04 percent is sold directly to consumers/households, 26.09 percent is sold to middlemen and 10.87 percent is sold to hotels/shops.

Most of the farms follow traditional and informal marketing of milk. In Milma, price of milk is determined on the basis of FAT and Solid No Fat (SNF) content in the milk. Here in this paper, we explain the role of various marketing channels of dairy products and analyse the reason for choosing them. Milk marketing channels in Kerala takes the following form (Table 3). All these kinds of marketing channels are found functioning during the period of study. It is found that marketing channel of producer to consumer is more profitable and beneficial to producers than any other marketing channels even if farmers can sell more quantities of milk to consumers/households directly. Higher price received for milk is the main reason for it. No intermediary is involved in this process. Therefore, entire margin is received by the producer itself.

TABLE 3
MILK MARKETING CHANNELS

S No	Marketing channel	Number of intermediaries
1	Producer- Consumer	0
2	Producer-dairy coop. society-consumer	1
3	Producer-dairy coop. society-retailer-consumers	2
4	Producer-middlemen-consumer	1
5	Producer-middlemen-retailer-consumer	2
6	Producer-middlemen-processor-retailer-consumer	3
7	Producer-retailer-consumers	1
8	Producers-middlemen-retailer-consumers	2

Source: Primary data

6.2.1 Quantity of milk produced, consumed and sold per month

Milk production is the output of various factors and inputs, and a number of stages involved such as management of herd, milking, collection, transportation, processing and distribution. Out of the total milk produced by the farmers a certain amount is consumed by themselves. Remaining part of milk is sold to dairy cooperative society and local market including consumers, middlemen and hotels/shops.

Table 4 shows average quantity of milk produced by dairy farmers in Ernakulam district. In terms of quantity, on an average 3168 litres of milk is produced per month. From the table it is clear that as the farm size increases quantity of milk produced increases. It indicates that with farm size increases number of milch animals is high which leads to increased milk production.

TABLE 4
QUANTITY OF MILK PRODUCED, CONSUMED AND SOLD (IN LITRES) AND SHARE OF MILK CONSUMED AND SOLD TO TOTAL MILK PRODUCED (IN %) PER MONTH

Farm size	Quantity of milk (litre)			Share of milk (%)	
	Produced	Consumed	Sold	Consumed	Sold
Very Small	1220	27	1193	2.21	97.79
Small	2433	33	2400	1.36	98.64
Medium	3596	40	3556	1.11	98.89
Large	5337	55	5282	1.03	98.97
Very Large	11612	54	11558	0.47	99.53
Total	**3168**	**35**	**3133**	**1.10**	**98.90**

Source: Primary data

Farmer consumes a part of the total milk produced. Quantity of milk consumed by each household depends upon the size of family, age of the household members, taste and preferences etc. Table 4 present data on average quantity of milk consumed per month. On an average 35 litres of milk are consumed per month. That means on an average 1 litre of milk is consumed per day. Due to availability and high quality of milk household of farmers consume milk. From the table it is found that on an average 1.10 percent of total quantity of milk produced is consumed per month. Remaining part is sold to different marketing channel. On an average 3133 litres of milk are sold per month which indicates that 98.90 percent of total quantity of milk produced is sold per month.

6.2.2 Quantity of milk sold to cooperative society and local market per month

Out of total milk available for sale, major part of milk is sold to dairy cooperative society and local market includes households/consumers, middlemen and hotels/shops. It indicates that farmers try to sell their milk in various channels in the hope of getting a certain amount of margin. Selling milk to dairy cooperative society alone is not viable to them. Therefore, they have to find other channels and market. Quantity and share of milk sold to cooperative society and local market per month are presented in the Table 5.

TABLE 5
QUANTITY OF MILK SOLD (IN LITRES) AND SHARE OF MILK SOLD TO COOPERATIVE SOCIETY AND LOCAL MARKET (IN %) PER MONTH

Farm size	Quantity of milk sold (litre)		Share of milk sold (%)	
	Cooperative Society	Local market	Cooperative Society	Local market
Very Small	996	197	83.49	16.51
Small	1867	533	77.79	22.21
Medium	2583	973	72.64	27.36
Large	3570	1712	67.59	32.41
Very Large	7286	4272	63.04	36.96
Total	**2259**	**874**	**72.10**	**27.90**

Source: Primary data

Due to accessibility and high quantity of purchase farmers find easiness in marketing milk to cooperative society. It is found from the Table 5 that on an average more than 70 percent of total quantity of milk is sold to cooperative society. Remaining part is sold to local market. Table 6 illustrates average quantity of milk sold to local market which includes households, hotels/shops and middlemen. Quantity of milk sold to local market indicates that farmers sell a one fourth portion of the milk to local market across different farm size. On an average 874 litres are sold to local market per month. Due to reasonable price, timely payment, accessibility and high quantity of purchase farmers sell milk to the abovementioned marketing channels.

TABLE 6
QUANTITY OF MILK SOLD (IN LITRES) AND SHARE OF MILK SOLD TO CONSUMERS/HOUSEHOLDS, HOTELS/SHOPS AND MIDDLEMEN (IN %) PER MONTH

Farm size	Quantity of milk sold (litre)			Share of milk sold (%)		
	Consumers/Households	Middlemen	Hotels/Shops	Consumers/Households	Middlemen	Hotels/Shops
Very Small	197	0	0	100.00	0.00	0.00
Small	453	34	46	84.99	6.38	8.63
Medium	853	51	69	87.67	5.24	7.09
Large	1082	221	409	63.20	12.91	23.89
Very Large	1522	2189	561	35.63	51.24	13.13
Total	**551**	**228**	**95**	**63.04**	**26.09**	**10.87**

Source: Primary data

Detailed explanation for the average price and quantity of milk soldto cooperative society and other local marketing channels and reasonsfor choosing them has been given below.

6.2.3 Cooperative society

The most important milk marketing channel is the dairy cooperatives. In Kerala, Dairy Cooperative Society (DCS) performs well in the procurement of milk. These DCS are working under Kerala Cooperative Milk Marketing Federation (KCMMF) popularly known as "Milma" established in 1980 as a part of the successful implementation of Operation Flood. The socio-economic progress of the dairy farmer through procuring, processing and marketing of milk is the main goal of KCMMF. In order to achieve this goal cooperative societies are formed in every part of Kerala. A group of farmers are formed together and sell milk to cooperative society. Apart from these DCSs, there are some other cooperative societies like People Dairy Development Project (PDDP) Central Society and Jeeva Milk which have significant market share in Ernakulam district.DCS provides some services to farmers which distinguish from other marketing channels. Dairy farmers get a

somewhat fair price for the milk they sell and provide an assured marketing space for the milk and thereby financial security is maintained. Thus, dairy sector is organized in this way. Major difference between DCS and other cooperative society is that farmers get higher price for milk by other dairy cooperative society rather than DCS.

TABLE 7
NUMBER OF DAIRY FARMS SELL MILK TO AGENTS/MARKETING CHANNELS

Farm size	Cooperative society		Consumers/ Households		Middlemen		Hotels/Shops	
	No of farmers	Percentage	No of farmers	Percentage	No of farmers	Percentage	No of farmers	Percentage
Very Small	94	29.4	72	25.6	0	0.0	0	0.0
Small	142	44.4	134	47.7	3	16.7	14	46.7
Medium	44	13.8	40	14.2	2	11.1	6	20.0
Large	11	3.4	11	3.9	2	11.1	3	10.0
Very Large	29	9.1	24	8.5	11	61.1	7	23.3
Total	**320**	**100.0**	**281**	**87.81**	**18**	**5.6**	**30**	**9.4**

Source: Primary data

Table 7 illustrates the number of farmers pour milk to Dairy Cooperative Society and other society, consumers/households, middlemen and hotels/shops. From the table it is obvious that all the farmers pour milk to dairy cooperative societies across different farm size. Majority of farms belongs to small farms; as a result, 44.4 percent of small farmers sell milk to dairy cooperative society.

6.2.4 Average price and quantity of milk sold to dairy cooperative society

Average price per litre and quantity of milk pour to cooperative society per month are presented in Table 8. Price is fixed by dairy cooperative society on the basis of fat and SNF content of milk. On an average of 2259 litres of milk pour to cooperative society per month at Rs. 37 in Ernakulam district. Table shows that very small farmers get higher price (Rs.40) than other farms. Lowest price is received by small, medium and very large farms with Rs. 36 each.

TABLE 8
AVERAGE PRICE (RS.) AND QUANTITY OF MILK (IN LITRE) SOLD TO AGENTS/MARKETING CHANNELS

Farm size	Cooperative society		Consumers/ Households		Middlemen		Hotels/Shops	
	Price	Qty	Price	Qty	Price	Qty	Price	Qty
Very Small	40	996	51	197	0	0	0	0
Small	36	1867	47	453	47	34	45	46
Medium	36	2583	48	853	48	51	45	69
Large	38	3570	50	1082	44	221	48	409
Very Large	36	7286	48	1522	46	2189	46	561
Total	**37**	**2259**	**49**	**551**	**46**	**228**	**44**	**95**

Source: Primary data

It is found that selling milk to consumers/households is more profitable and beneficial to farmers than any other marketing channels even if farmers can sell more quantities of milk to consumers/households directly. Farmers get higher price for the milk from the consumers/households than any other marketing channels. But in reality, farmers sell higher quantity of milk to dairy cooperative society where they get a lower price which is not feasible and viable. When considering return from milk, dairy cooperative society contributes more. On an average, price difference of Rs. 12 has been found between the price of milk sold to dairy cooperative society and consumers/households.

6.2.5 Reason for choosing dairy cooperative society

From the Table 9, it is clear that main reason for choosing dairy cooperative is timely/regular payment (100%), high quantity of purchase (98.44%), accessibility (97.81%), no network facility for direct marketing/no household demand (92.19%) and conventional practice (80.00%). Very few farmers choose dairy society due to reasonable and higher price (26.88%) they get.

From the table it is clear that some kind of malpractices is there in cooperative society in measuring Fat and SNF content. Some farmers sell milk to cooperative society due to known persons. They personally know dairy society secretaries.

TABLE 9
REASON FOR CHOOSING VARIOUS AGENTS/MARKETING CHANNELS

Reasons	Cooperative society		Consumers/ Households		Middlemen		Hotels/Shops	
	No of farmers	%	No of farmers	%	No of farmers	%	No of farmers	%
Advance payment	0	0.00	22	7.83	0	0.00	0	0.00
Timely/ regular payment	320	100.00	249	88.61	17	94.44	28	93.33
Known Persons	6	1.88	273	97.15	18	100.00	30	100.00
No malpractice	5	1.56	273	97.15	7	38.89	30	100.00
Reasonable/ Higher price	86	26.88	278	98.93	18	100.00	30	100.00
Accessibility	313	97.81	263	93.59	18	100.00	29	96.67
High quantity of purchase	315	98.44	7	2.49	18	100.00	3	10.00
Network facilities	0	0.00	2	0.71	2	11.11	0	0.00
Conventional practice	256	80.00	110	39.15	0	0.00	7	23.33
No network facility for direct marketing/No household demand	295	92.19	1	0.36	5	27.78	7	23.33
Other reasons if any	0	0.00	0	0.00	0	0.00	0	0.00

Source: Primary data

6.2.6 Consumers/Households

Consumer plays an important role in marketing process and they act as central element in the commodity market. Household is also used in the same meaning of consumer. Recently there has been a new trend in urban Kerala in which consumers prefers fresh farm milk even though price of milk is high. For them higher price is the indicator of quality milk. Farmers find difficult in selling whole milk to dairy cooperative society since they provide less price for the milk when compared to other marketing channels. Price variation is very high from location to location. It is not viable for the farmers if they sell entire quantity of milk to society alone. Therefore, farmers try to find other market channels which provide reasonable price and easy accessibility. These marketing channels are commonly known as local market. Consumers/household is one among local market channels. Table 7 reveals that out of 320 farmers, 87.81 percent sell milk directly to consumers/households. Remaining 39 farmers (12.19%) do not sell to consumers/households.

6.2.7 Average price and quantity of milk sold to consumers/households

Average price per litre and quantity of milk sold to consumers/households per month is illustrated in Table 8. It can be seen that on an average 551 litres of milk are sold per month at Rs. 49. It helps the farmers to increase their revenue from selling milk to consumers. Table shows that very small farmers get higher price (Rs.51) than other farms. Lowest price is received by small farmers with Rs. 47. Both very small and large farmers receive higher price than the district average. Along with price, average quantity of milk sold is very much important for a farmer in getting more revenue. When look at the data it is shown that average quantity of milk sold to consumers fluctuates over different farm size.

6.2.8 Reason for choosing consumers/households

From the Table 9, it is clear that due to reasonable price /higher price (98.93%), known persons (97.15%), no malpractice (97.15%), accessibility (93.59%), timely/regular payment (88.61%) and conventional practice (39.15%) farmers have chosen consumers/households. It also can be seen from the table that very few farmers chose consumers/households due to advance payment (7.83%), high quantity of purchase (2.49%), network facilities (0.71%) and no network for direct marketing

(0.36%). When sell milk to consumers farmers get fair prices but higher quantity of purchase by consumers is not possible. Farmers do not have much network for expanding their sale. Majority of farmers have the opinion that no malpractices is from consumers in selling milk directly to consumers.

6.2.9 Middlemen

Yet another important marketing channel adopted by dairy farmer in Ernakulam district is middlemen. They act as a distributor of products and try to reduce the gap between producer and consumer. They are like traditional middlemen who pick up the bulk amount of milk from the farmers and directly sell to consumers, hotels or restaurants and take a margin on the milk while selling. Present study found out that very few sells milk to these intermediaries even though they provide reasonable or higher price. It is due to the asymmetric information possessed by farmers regarding price. Table 7 reveals that out of 320 farmers, only 5.6 percent sell milk directly to middlemen. It indicates that majority do not depend on middlemen in selling milk due to various reasons.

6.2.10 Average price and quantity of milk sold to middlemen

Average price per litre and quantity of milk sold to middlemen per month is illustrated in Table 8. It can be seen that on average milk sold to middlemen at Rs.46. On an average 228 litres of milk are sold to middlemen per month. It is found from the table that only small and medium farmers receive higher price with Rs 47 and Rs. 48 respectively which is higher than that of district average. Very small farmers do not sell milk to middlemen. When considering average quantity of milk sold to middlemen, it is seen that very large farmers sell larger quantity of milk (2189 litres) to middlemen. When compared to the price of milk sold to middlemen with other marketing channels, on an average, difference of Rs. 9 has been found between DCS and other cooperative society and middlemen where price of milk sold to middlemen is higher. Price difference of Rs. 3 and Rs. 2 is found between middlemen and consumers/households and between middlemen hotels/shops respectively where price of milk sold to consumers/households are higher and price of milk sold to hotels/shops are lower than that of the price of milk sold to middlemen.

6.2.11 Reason for choosing middlemen

Reasons for choosing middlemen as marketing channel is presented in the Table 9. Percentage of farmers who sell to middlemen due to various reasons is calculated by using the number of farmers who sell to the same and excluded the number of farmers who do not sell to middlemen. From the table it is clear that due to known persons (100%), reasonable price /higher price (100%), accessibility (100%), high quantity of purchase (100%), timely/regular payment (94.44%), no malpractice (38.89%) no network facility for direct marketing/no household demand (27.78%) and no network facilities (11.11%) farmers have chosen middlemen. Main advantage of selling to middlemen is the high quantity of purchase When compared to other local marketing channels. Data indicates that some kind of malpractices in the form of price reduction is there. Middlemen sometimes try to mislead the farmers by giving wrong information about price. Due to this asymmetric information on the producer's side they have to accept that price.

6.2.12 Hotels/shops

Fourth important channel in milk market is institutional buyers like hotels/shops. Some farmers sell a part of their surplus milk to hotels/shops to get a margin. Table 7 reveals that out of 320 farmers, only 9.4 percent sell milk directly to hotels/shops. It indicates that majority do not sell milk to hotels/shops. Out of 30 farmers who sell milk to hotels/shops, 46.7 percent are small farmers followed by very large farmers with 23.3 percent, medium farmers with 20 percent and large farmers with 10 percent. Very small farmers do not sell milk to hotels/shops since cooperative society and consumers/households are the only marketing channels to them.

6.2.13 Average price and quantity of milk sold to hotels/shops

Average price per litre and quantity of milk sold to hotels/shops per month is illustrated in Table 8. It can be seen that on average milk sold to hotels/shops at Rs.44. Farmers have opined that they do get fair price when they sell milk to hotels/shops. On an average 95 litres of milk is sold per month. Both large and very large farmers sell higher quantity of milk to hotels/shops and get a higher price than that of district average with Rs.46 and Rs.48 respectively. When compared to the price of milk sold to hotels/shops with other marketing channels, on an average, difference of Rs. 7 has been found between DCS and hotels/shops where price of milk sold to hotels/shops is higher. Price difference of Rs. 5 and Rs. 2 is found between hotels/shops and consumers/households and between hotels/shops and middlemen respectively where price of milk sold to consumers/households and middlemen are higher than that of the price of milk sold to hotels/shops.

6.2.14 Reason for choosing hotels/shops

Reasons for choosing hotels/shops as marketing channel have presented in the Table 9. Percentage of farmers who sell to hotels/shops due to various reasons is calculated by using the number of farmers who sell to the same and excluded the number of farmers who sell milk to others channels. From the table it is clear that due to known persons (100%), reasonable price /higher price (100%), no malpractice (100%), accessibility (96.67%) and timely/regular payment (93.33%) and conventional practice and no household demand (23.33%) farmers have chosen hotels/shops. It also can be seen from the table that very few farmers chose hotels/shops due to high quantity of purchase (10%) and no malpractice (3.33%). Even though farmers get fair price when sell milk to hotels/shops they are unable to sell higher quantity to them due to various reasons like unavailability of information, no network facilities etc. Data indicates that no kind of malpractices is there. Farmers do not have much network for expanding their sale. Therefore, it is found that due to the higher price received for milk from consumers/households, selling milk to consumers/households is more profitable and beneficial to farmers than any other marketing channels if and only if farmers can sell more quantities of milk to consumers/households directly. But in reality, due to timely/regular payment, high quantity of purchase, accessibility, and no network facility for direct marketing/no household demand, out of total milk sold, 72.10 percent of milk sold to dairy cooperative society where they get a lower price which is not feasible and viable and remaining portion is sold to other local market. Therefore, as one of the main objectives of rural development is to ensure economic well being of people by providing adequate income and employment, it is necessary to ensure reasonable price for the milk produced by farmers without affecting their willingness to produce.

VII. CONCLUSION

It is evident that Kerala has the great potential in dairy sector since there is huge market for the product due to growing demand. Due to the involvement of many factors like lack of infrastructure facilities, transportation, interference of intermediaries, less bargaining capacity and lack of knowledge about the marketing conditions Kerala's milk marketing is facing a huge challenges and constraints. As a result, many of the farmers could not find market for their products which creates pricing issues and thereby lowering profit. Proper marketing strategies are essential for the better and successful running of dairy farm. In this context the present study has analysed the marketing strategy adopted, various milk marketing channels, quantity of milk sell to these channels and the reasons for choosing in Ernakulam district are studied in detail.

Present study reveals that procurement prices are lower in the cooperative societies. Therefore, it is found that due to the higher price received, selling milk to consumers/households is more profitable and beneficial to farmers than any other marketing channels if and only if farmers can sell more quantities of milk to consumers/households directly. When considering return from milk, dairy cooperative society contributes more since average quantity of milk sold to dairy cooperative society is higher than that of any other marketing channels. It implies the existence of various reasons such as timely/regular payment, high quantity of purchase, accessibility, and no network facility for direct marketing/no household demand. Therefore, out of total milk sold, 72.10 percent of milk is sold to dairy cooperative society which indicates that farmers are not able to extend their market and they have to entirely depend on cooperative society which is found non feasible and non-viable. On an average, price difference of Rs. 12 has been found between the price of milk sold to dairy cooperative society and consumers/households. Apart from that, due to the lack of extended marketing facility/unawareness about the extended marketing opportunities, and lack of transportation facility only 27.90 percent of total milk sold is available for local sale which indicates the dominance of traditional marketing channel like cooperative society. In order to reach a break-even point, some quantities of milk have to be sold to other local marketing channels other than cooperative society. Otherwise, farmers will incur huge loss which in turn adversely affects the willingness of the farmers in producing milk and it will reflect in the decline of milk production in Ernakulam district. Therefore, as the main objective of rural development is to ensure economic well being of people by providing adequate income and employment, it is necessary to ensure reasonable price for the milk produced by farmers without affecting their willingness to produce. In this context, in order to meet the increased demand for milk on the consumer's side, government and concerned department have to take appropriate actions to boost the milk market in Ernakulam district by focusing on both production side and marketing side with equal importance.

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