INSTITUTIONAL INTERVENTION BY DAIRY CO-OPERATIVES IN PALAKKAD DISTRICT

By

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(2019-15-001)

THESIS

Submitted in partial fulfilment of the requirement for the degree of

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Kerala, India

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DECLARATION

DECLARATION

I hereby declare that the thesis entitled **"Institutional intervention by dairy co-operatives in Palakkad district"** is a bonafide record of research work done by me during the course of research and the thesis has not previously formed the basis for the award to me for any degree, diploma, associateship, fellowship or other similar title, of any other university or society.

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Certified that the thesis entitled **"Institutional intervention by dairy co-operatives in Palakkad district"** is a record of research work done independently by **Ms. Maria Poulose T (2019-15-001)** under my guidance and supervision and that it has not previously formed the basis for the award of any degree, diploma, fellowship or associateship to her.

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INTRODUCTION

“The greatness of a nation can be judged by the way its animals are treated”-
Mahatma Gandhi

The development of dairy farming in India has been recognized around the world as one of the most successful dairy activities. Cattle domestication has been practiced throughout the world since prehistoric times and continues to this day. The cow was so important to the early peoples of Central Asia that wealth was measured in terms of the number of cattle. Later, the cow was valued as a sacred animal, and it is still respected by a sizable portion of India's Hindu population. Around 2000 BC, the cow was also worshipped in Babylonia and Egypt. From those early days to the present, the cow has continued to assist man, and this assistance as a source of food has not diminished over the thousands of years.

Cattle play a critical role in rural economic development; the economic importance of cattle in India is based on the production of milk and other milk products. However, the contribution of cattle production to total agricultural production is used to assess the role of cattle and dairy farming in an economy. Aside from milk, cow dung and urine are good sources of medicines and organic manure, both of which are useful for making the soil fertile. Cows and buffaloes generally feed on plants and vegetables that humans cannot eat or digest. They convert their rough feeds into products that are useful to humans, such as milk, manure, and meat. Several studies have found that mixed farming earns more than solely dairy farming. The dairy development activities could be used to bring about social and economic change in rural areas.

As a perfect food, milk is an essential component of the human diet. It contains almost all of the material that the human body requires in the most appropriate proportion. The milk contains water and solids, which include proteins, fats, sugar, and a variety of mineral substances and vitamins. All of these substances are in a form that allows them to be easily utilized in the construction and repair of body tissues and bones, as well as the maintenance of health and normal growth. Milk has been used as

a food source since ancient times. Boiling cow's milk was a regular feature of the upper classes' diets during the third Vedic period (2000 to 1500 B.C.).

The Indian Council of Medical Research's nutritional expert group has recommended 300 grams of milk per day for children aged 7 to 18 years, as well as 200 grams for adults. The minimum nutritional requirement per person per day is approximately 200 grams of milk. As a result, the importance of milk in the diet is widely acknowledged.

1.1 Composition of milk

Milk is a composite mixture of fats, proteins, minerals, vitamins, and other miscellaneous constitutes dispersed in water. Milk, when freshly obtained is a white opaque fluid when seen in bulk and has a typical faintly sweetish taste and strange odour. The white colour of milk is due to the calcium caseinate it contains, and the opacity is due to the same substance. Sometimes, a yellowish shade is noticeable, that it is due to a carotene related to the fat of milk. The exact density of milk ranges between 1.027 g/cm3 to 1.040 g/cm3, the average being 1.032 g/cm3. Cold milk has greater thickness and consistency than warm milk. Thickness is increased by age, low temperature, products of fermentation, and a high solid and fat content. The freezing point of milk is -0.540 ^{0} c to -0.570 ^{0} c lower than that of water. When water is added to milk, the freezing point rises. Boiled milk has a lower freezing point than raw milk.

Table 1.1 Composition of milk (240 ml-1 cup)

Sl. No.	Nutrition	Cow milk	Buffalo milk
1	Calories	149	237
2	Water	88%	83%
3	Protein	7.7 grams	9 grams
4	Carbs	11.7 grams	12 grams
5	Lactose	11 grams	13 grams
6	Fat	8 grams	17 grams
7	Calcium	21 % of daily value	32 % of daily value

Source: FAO

Table 1.1 reveal the content and their percent in cow milk and buffalo milk. Buffalo milk has more protein, fat, and lactose than whole cow's milk. Consuming milk with higher protein content increases your feelings of fullness. This may help reduce food intake throughout the day, thus helping you lose weight and body fat. On the other hand, consuming cow's milk is better to reduce your fat intake. Buffalo milk also has more vitamins and minerals. Lastly, since buffalo milk is lower in water but higher in fat, it has a thicker texture that's suitable in the production of fat-based dairy products like butter, ghee, cheese, and ice cream.

1.2 Global scenario of milk production

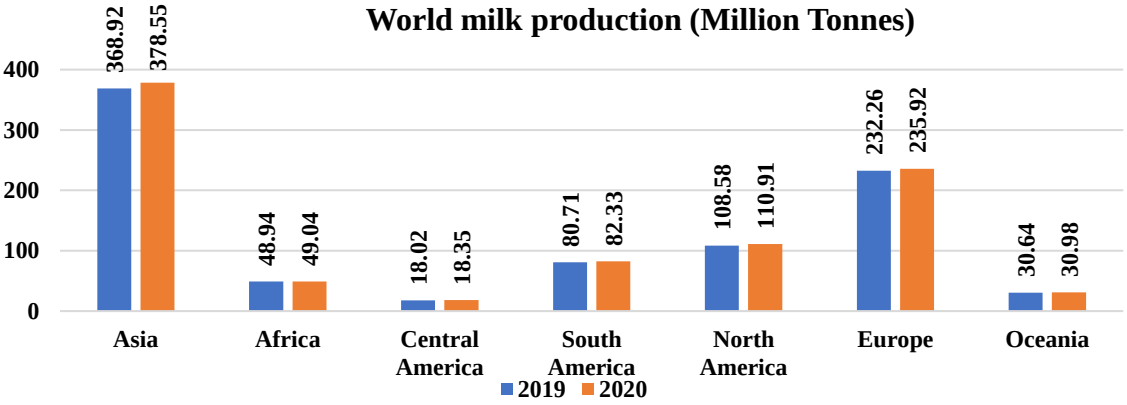
Global milk production touched nearly 906 million tonnes in 2020, up 2.1 percent from 2019, driven by output increases in all geographical areas, except in Africa, where production remained stable. Milk volume rises were highest in Asia, followed by Europe, the Americas, Oceania, and Central America, and the Caribbean.

Table 1.2 World milk production by region

Regions	**Production (Million Tonnes)**		**Growth Rate (%)**
	2019	**2020**	
Asia	368.92	378.55	2.5
Africa	48.94	49.04	0.2
Central America	18.02	18.35	1.7
South America	80.71	82.33	2.0
North America	108.58	110.91	2.1
Europe	232.26	235.92	1.5
Oceania	30.64	30.98	1.1
World	**888.07**	**905.99**	**2.1**

Source: FAO

Fig 1.1 World milk production by region



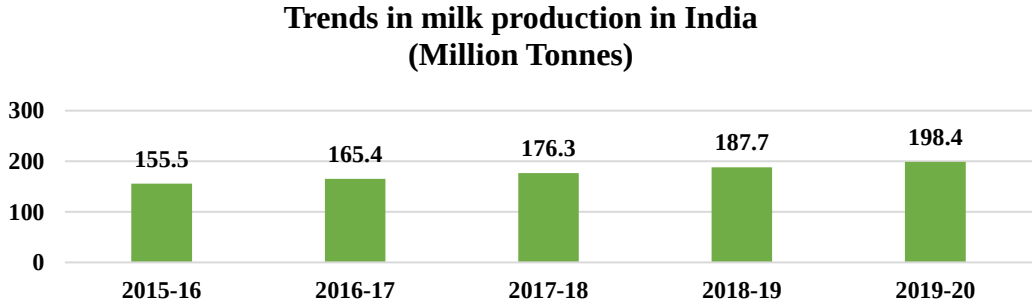
Source: FAO

The table 1.2 and fig 1.1 reveals the world milk production of 2019, 2020 by different regions namely, Asia, Africa, Central America, South America, North America, Europe, and Oceania. Among the regions, Asia is the highest milk-produced region and Central America is the lowest milk-produced region. The largest growth rate was marked in Asia and the least was marked in Africa. The grouped contribution of these regions increased the world milk production to 888.07 MT in 2019 and 905.99 in 2020.

1.3 The national scenario of the dairy industry

Dairying has become an important primary source of income for millions of rural families and has assumed the most important role in providing employment and income-generating opportunities, particularly for marginal and women farmers. Most of the milk is produced by animals reared by small, marginal farmers and landless laborers.

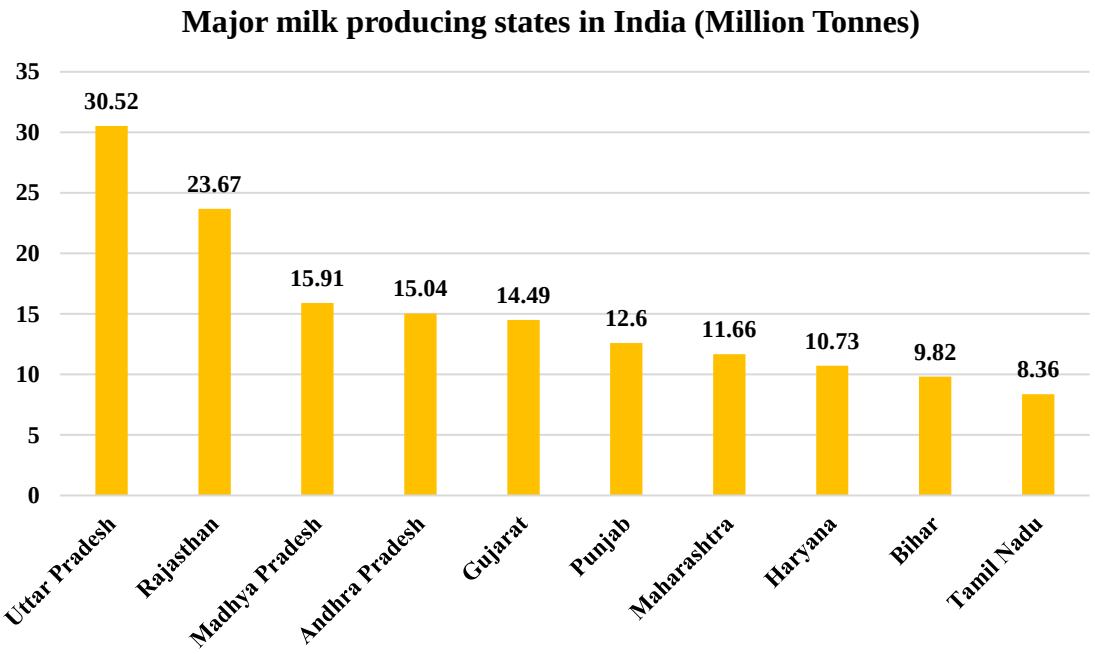
Fig 1.2 Trends in milk production in India from 2015-16 to 2019-20



Source: Economic Survey Report 2020-21

Several measures have been introduced by the Government to increase the productivity of livestock, which has resulted in increasing milk production significantly. In 2019-20, milk production increased by 5.68 percent as compared to the previous year. The per capita availability of milk was 407 grams per day in 2019-20.

Fig 1.3 Major milk-producing states in India during 2019-20



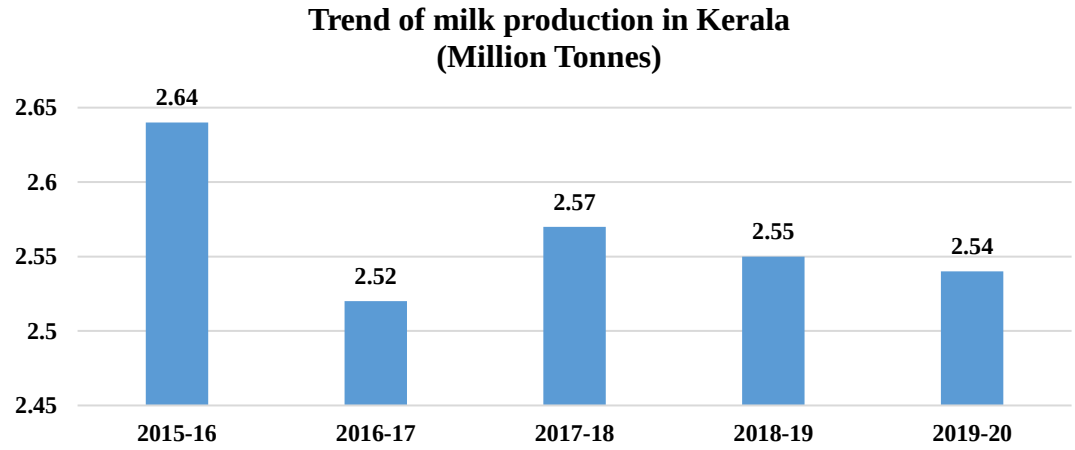
Source: FAO

Fig 1.3 shows the major milk-producing states of India in 2019-20. It is relevant to note that the state of Uttar Pradesh and Rajasthan tops the list with 30.52 million Tonnes and 23.67 million Tonnes of milk production in 2019-20, respectively. Unfortunately, the state of Kerala is not included in the first ten milk producing states of India.

1.4 Dairy industry in Kerala

Kerala currently represents the twelfth largest dairy market in India. The share of livestock in the Agriculture Sector is above 27 percent. The livestock population in Kerala was 38.36 lakh in the year 2019 (Economic Review Report, 2019). Kerala has 13 milk processing plants, and it now produces more than 12.50 lakh liters of milk per day (KCMMF, 2019).

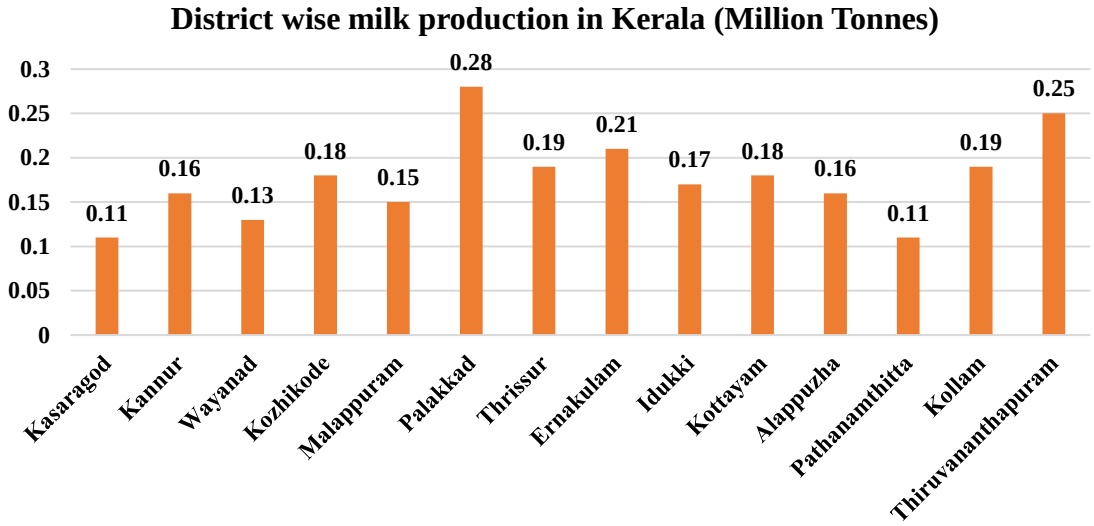
Fig 1.4 Trend of milk production in Kerala from 2015-16 to 2019-20



Source: National Dairy Development Board

The milk production in Kerala shows a fluctuating trend throughout the referred period. It is due to the natural calamities and health issues of cattle in Kerala. The total requirement of milk in Kerala in 2019-20 was 3.3 million tonnes, but the supply was only 2.5 million tonnes resulting in a deficiency of 0.8 million tonnes of milk. This deficiency was solved through the import of milk from other states namely, Tamilnadu and Karnataka.

Fig 1.5 District wise milk production in Kerala during the year 2019-20



Source: Integrated Sample Survey Report 2019-20 GOK

The Fig 1.5 shows the milk production in different districts of Kerala during 2019-20. Among these, Palakkad district is leading with the highest quantity of milk

production (0.28 million Tonnes). Hence, the Palakkad district was selected for the purpose of this study. The Kasaragod and Pathanamthitta districts are with least quantity of milk production (0.11Million Tonnes).

1.5 Institutional supports to the dairy sector

Institutional support is essential for the development of the dairy sector. This will help to assist the dairy farmers in their empowerment. The following table explains the international, national, and state-level institutions to support the dairy sector.

Table 1.3 Institutional supports to the dairy sector

Levels	Institution	Description
International Level	a) International Dairy Federation (IDF)	It is the leading source of scientific and technical expertise for all stakeholders of the dairy chain. It has provided a mechanism for the dairy sector to reach a global consensus on how to help feed the world with safe and sustainable dairy products.
	b) International Dairy Foods Association (IDFA)	It represents America's dairy manufacturing and marketing industry of America, which supports to generates millions of jobs and wages in overall economic impact.
	c) The Global Dairy Institute (GDI)	The GDI is a collaboration of eight outstanding companies that are world leaders in their respective fields serving the dairy industry worldwide.

National Level	a) Department of Animal Husbandry and Dairying (Government of India)	The department is responsible for matters related to livestock production, livestock diseases, livestock & dairy development, and matters related to NDDB**.**
	b) National Co-operative Dairy Federation of India Limited (NCDFI) 	It is the apex organization for the co-operative dairy sector. Its members include federal dairy co-operatives of states and union territories. NCDFI is to facilitate the working of dairy co-operatives through coordination and advocacy.
	c) National Dairy Research Institute (NDRI) 	NDRI is the country's premier dairy research institution which expertise in different fields such as dairy production, processing, and management. The information generated at the institute and the services offered have contributed to the growth of the dairy industry as a whole and the well-being of millions of milk producers and consumers of milk and milk products.
	d) National Dairy Development Board (NDDB) 	It was created to promote, finance, and support producer-owned and controlled organizations. They are also aimed to strengthen farmer-owned institutions and to support national

		policies that are favourable to the growth of such institutions.
	f) Indian Dairy Association (IDA)	IDA is the apex body of the dairy industry in India. They are aimed at the advancement of dairy science and industry, farming, animal husbandry, animal sciences, management of dairy livestock.
State Level	a) Kerala Co-operative Milk Marketing Federation (KCMMF)	It is functioning as a state-level apex organization of dairy co-operatives in Kerala with three tired structures. Their goal is to achieve farmers' prosperity through consumer satisfaction.
	b) Dairy Development Department (Government of Kerala)	The department is functioning for comprehensive and sustainable dairy development of Kerala with assured well-being of dairy farmers, consumers, and other stakeholders for a prosperous future.

Source: Secondary data

1.6 Dairy co-operatives in India

The co-operative movement started in India in the 19th century since the enactment of "the co-operative credit societies act, 1904 (act 10 of 1904)" under the British control on Raiffeisen model with two objects namely, to keep the farmers from the clutches of private money lenders and to expand their economic condition. Madras province was the birthplace of this movement. With the setting up of agricultural co-operative banks there, the movement took root in our land and gradually gained

strength. However, the development of co-operative movement in India during British rule was a very slow and random one. In most of the cases, the provincial governments took the lead. The foreign ruler had only constituted some committees or mounted a few rules and regulations. But they did not take any extensive programme to spread the movement all over the country.

It has been observed that the co-operative movement in India owes its origin to agriculture and allied sectors. This sector has emerged as one of the largest sectors in the world and is playing a significant role in the socio-economic growth of the country. It is a remarkable mechanism for sharing the insufficient resources of its members for solving common difficulties relating to credit, supplies of input, and marketing of produce. The golden era of co-operative movement commenced after India had won freedom. Within two decades of independence, the membership of primary societies had enlarged four times while the share capital and working capital increased 23 and 31 times respectively.

The dairy co-operative movement has been central to the expansion of dairying in India. The history of the dairy development movement in India is a new one. During the pre-independence period, this movement was restricted to a few pockets of Calcutta, Madras, Bangalore, and Gujarat. The most notable of this venture was Kaira district co-operative milk producers' union limited of Anand, Gujarat -- better known as Amul, founded in 1946 in response to the manipulation of the district's dairy farmers. Dairy producers came under the influence of Gandhian philosophy and nationalist revolutionaries, which provoked the growth of the dairy co-operatives. But after independence, the national government took great initiative in setting up of new dairy co-operatives in several parts of the country.

In 1973, the Kaira co-operative union set up a marketing agency named Gujarat co-operative milk marketing federation (GCMMF), which follows a three-tier structure at the village, district, and state-level for procuring, processing, and marketing of milk and milk products. The district units also delivered technical support to the milk producers and a range of services such as feed, veterinary care, artificial insemination, education, and training. These milk co-operatives of Gujarat today own the GCMMF, the largest food products business in India. GCMMF is also the largest exporter of

dairy products from India and its brand name Amul is known all over the world. This experiment placed the foundation of the co-operative movement in milk production and marketing in India. The federal and democratic structure of these co-operatives ensures social and economic justice to the milk producers and is one of the major reasons for its achievement.

The government implemented this successful model and set up the national dairy development board (NDDB) in 1965 which prepared a proposal for a milk revolution across the country. The operation flood programme began in 1970 and was executed across the country. It was also one of the largest rural developments programmes in the world which ran for 26 years and helped India to emerge as the world's largest milk producer in 2003-04 with the highest output of 88.1 million tonnes.

Dairy co-operatives are running to support dairy farmers in the processing and selling of milk and milk products. The common requirement of milk producers is to obtain a fair price for their milk, and this is fulfilled through collective marketing. Milk is one of the most sensitive products under agriculture and allied sector, requiring special and timely care and this can be provided suitably as well as through the collective operation of dairy co-operative societies. Apart from the collection and marketing of milk, other facilities, such as dairy inputs, extension services, veterinary health care, artificial insemination services, provision of animal feed, fodder seed, planting material, training, and education to the farmers, are also provided through dairy co-operatives. Dairy co-operatives acted as business associations owned and functioned by members for their benefit.

Most of the dairy co-operatives in India are based on the principle of enlargement of farmers' profit and productivity through co-operative effort. This pattern, known as the Anand pattern, is an integrated co-operative structure that procures, processes, and markets produce. Supported by professional management, producers adapt their business policies, implement modern production and marketing techniques, and accept services that individually they can neither afford nor manage. The Anand pattern succeeds because it involves people in their progress through co-operatives where professionals are responsible to leaders elected by producers. The Anand model co-

operatives have progressively abolished middlemen, bringing the producers direct interaction with consumers.

The basic unit in the Anand pattern is the village milk producers' co-operative, a voluntary association of milk producers in a village who wish to market their milk collectively. Every milk producer can become a member of the co-operative society by purchasing a share and committing to sell milk only to society. Each producer's milk is tested for fat percentage (many also measure solids-not-fat) and is rewarded based on the quality of the milk. In addition to milk collection, other services such as cattle feed, artificial insemination, and veterinary services are also provided by the societies.

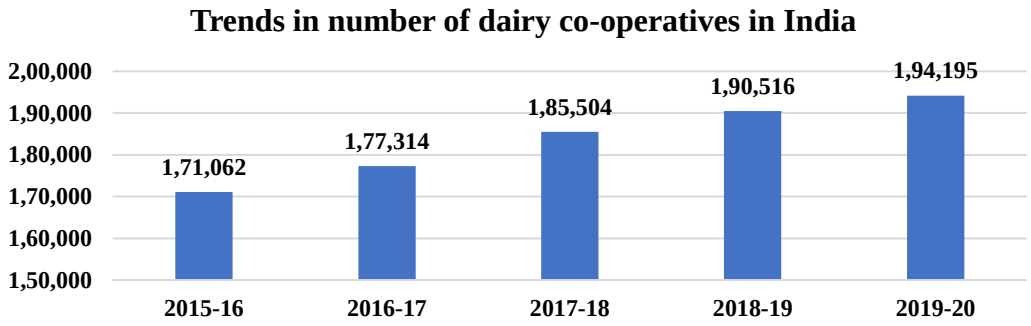
Village milk producers' co-operatives are the members of their regional co-operative milk producers' union. The union purchases all the societies' milk, then processes and markets fluid milk and products. Most unions also deliver a range of inputs and services to the village societies — feed, veterinary services, artificial insemination, and other services and have milk-processing plants to convert seasonal surpluses of liquid milk into milk powder and other preserved products. This allows the union to ensure better earnings for its members. The farmers had realized that marketing was the key to the success of the Anand pattern and their success when they had regulators over the marketing system.

Table 1.4 Trends in number of dairy co-operatives in India from 2015-16 to 2019-20

Region	2015-16	2016-17	2017-18	2018-19	2019-20
North	57,309	61,997	66,446	66,795	67,710
East	29,792	30,878	33,105	34,154	35,794
West	49,627	49,215	50,218	50,951	52,289
South	34,334	35,224	35,735	38,616	38,402
Total	**1,71,062**	**1,77,314**	**1,85,504**	**1,90,516**	**1,94,195**

Source: National Dairy Development Board Annual Report

Fig 1.6 Trends in number of dairy co-operatives in India from 2015-16 to 2019-20



Source: National Dairy Development Board Annual Report

Table 1.4 and diagram 1.6 display the trends in the number of dairy co-operatives in India. The graph represents growth in dairy co-operatives from 2015-16 to 2019-20. This growth indicates the interest of people in the dairy sector as well as in the dairy co-operative sector.

The following are the advantages to the producers and consumers through the co-operative form of organization.

i) It brings rural producers and urban consumers to direct contact abolishing middlemen.

ii) It gives incentives to producers by providing guaranteed market, remunerative price, regular payment, and yearly bonus out of profit.

iii) It gives scope for functional specialization and partition of responsibility between primary societies and the federations, the prior focused on the production and the final taking care of marketing.

iv) Payment made to producers based on the quality of milk confirms the supply of pure good quality milk.

v) All the requirements of the producers like cattle feed, fodder seeds, veterinary aid are met by co-operatives themselves at the doors of the producers.

vi) Producers are educated in the up-to-date knowledge on dairy farming through co-operatives.

vii) The assistance from Government and other agencies are easily routed through co-operatives.

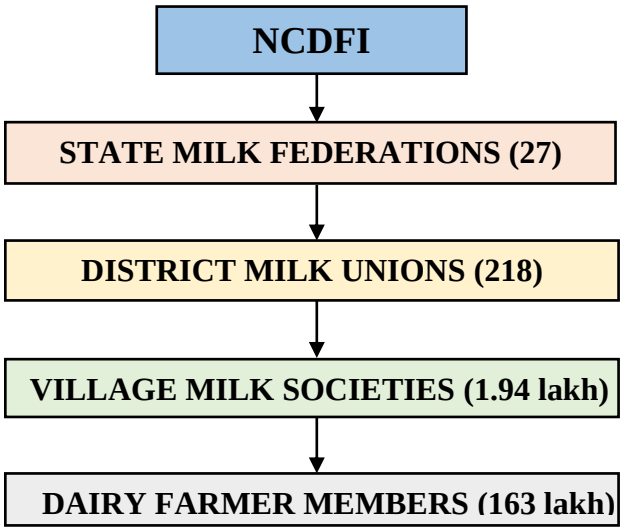
viii) Milk producers, as members of co-operatives, can get loans from financial institutions easily for the procurement of milch animals.

ix) Co-operatives ensure the participation of milk producers in the management and decision-making and provide collective bargaining power to the producers.

1.7 National Co-operative Dairy Federation of India (NCDFI)

National Co-operative Dairy Federation of India (NCDFI) was registered on December 07, 1970, under the Bombay Co-operative Societies Act and extended to the Union Territory of Delhi with its head office in New Delhi. However, it was only during the year 1984 that it started working as the apex body of the co-operative dairy industry. In December 1986, to gain the locational benefit, the NCDFI shifted its headquarters from Delhi to Anand - the milk capital of India. In April 1987, the NCDFI bylaws were amended to bring it under the provisions of the Multi-State Co-operative Societies Act. The NCDFI has 19 Regular Members, 11 Associate Members, and National Dairy Development Board (NDDB) as its institutional Members. Kerala Co-operative Milk Marketing Federation (KCMMF) is one of the regular members of the National Co-operative Dairy Federation of India (NCDFI).

Fig 1.7 Structure of National Co-operative Dairy Federation of India (NCDFI)



Source: National Co-operative Dairy Federation of India (NCDFI)

1.8 Dairy co-operatives in Kerala

Dairy activity has been a very popular economic activity among the rural households of Kerala since the ancient period. Even though the performance of agriculture shows a somewhat stagnant position the dairy sector in Kerala made remarkable progress during the last three decades. Through the crossbreeding programme, the milch herd highly became production-oriented. This facilitated increased production and productivity.

Dairy development during operation flood was commendable. The largest dairy development project in the world was launched in the year 1970 in one of the important milk sheds of the country. The Kerala co-operative milk marketing federation ltd (KCMMF) was registered in 1980 under the Kerala co-operative societies act, to implement the operation flood programme in Kerala. The major tasks assigned to the KCMMF were the formation of a procurement network including village-level dairy producers, co-operatives, and the expansion of the processing capacity. The prevailing processing facilities were being run by the Kerala Livestock Department (KLD) & Milk Marketing (MM) board, which owned the brand name Milma.

In 1983 the government ordered the transfer of the milk processing and marketing functions of the KLD & MM board to KCMMF along with the brand name. In 1985 regional milk unions were established in Trivandrum and Ernakulam to make the co-operative structure fully compatible with the Anand model. The first integrated dairy development project, aimed at establishing infrastructure that would simplify sustainable development of the sector. For this purpose, the project addressed simultaneously all the critical areas, namely, milk production, procurement, processing, and marketing.

In the case of Kerala, major developments had already been made around animal production by the time project arrived and, therefore, the thrust areas in the state were procurement, processing, and marketing. First, a widespread procurement system was created, by creating hundreds of village-level producer co-operatives. The network of co-operative would also serve as a channel for the distribution of inputs for milk production.

1.9 Kerala Co-operative Milk Marketing Federation (KCMMF)

Kerala Co-operative Milk Marketing Federation (KCMMF) is the apex body of the dairy co-operatives in Kerala. Under KCMMF, three Regional Co-operative Milk Producers' Unions are operating at present. Each union is consisting of village dairy co-operative societies where in turn the Milk producers are the members.

1. Thiruvananthapuram Regional Co-operative Milk Producers' Union (TRCMPU)
2. Ernakulam Regional Co-operative Milk Producers' Union (ERCMPU)
3. Malabar Regional Co-operative Milk Producers' Union (MRCMPU)

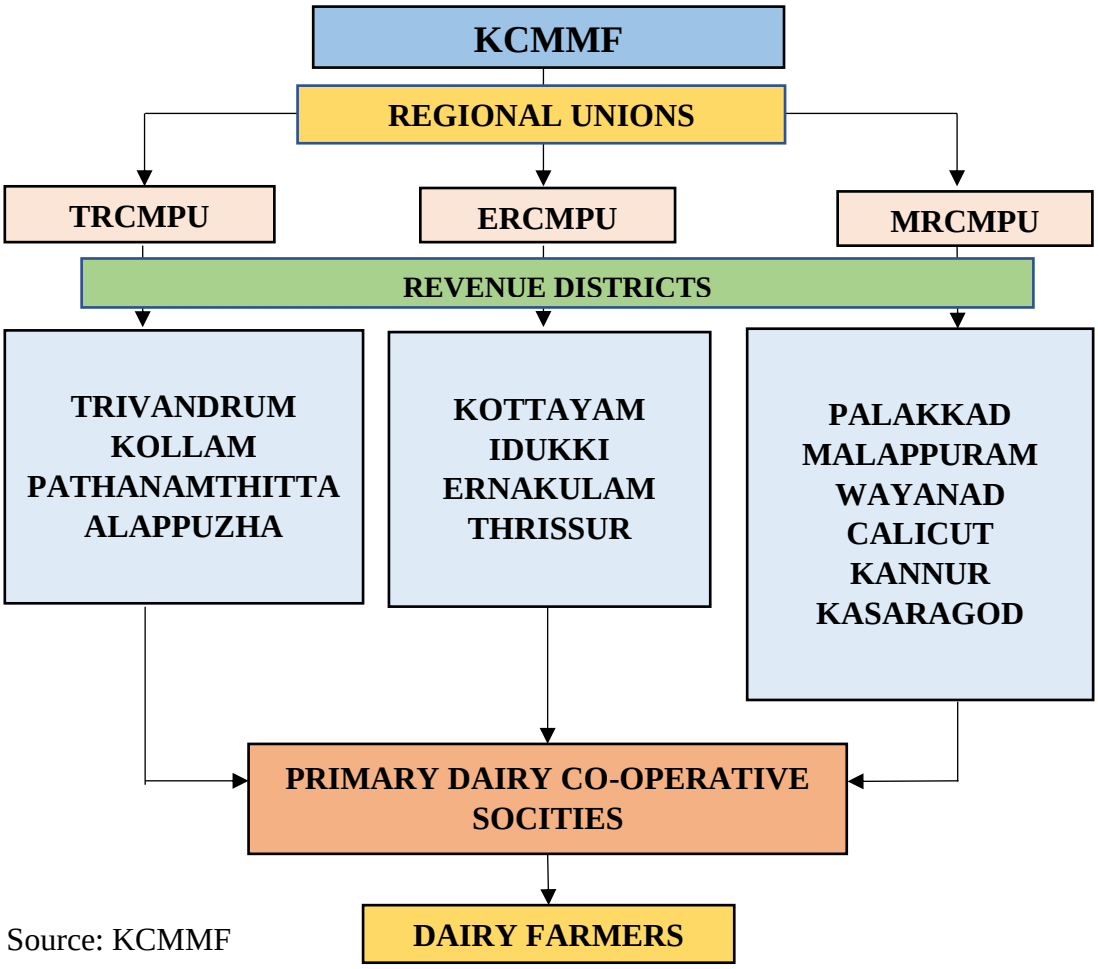
According to the Annual Report of KCMMF (2018-2019), there are 3315 APCOS functioning under three regions in Kerala. Among these, 1073 are under Thiruvananthapuram Regional Co-operative Milk Producers' Union (TRCMPU), 1031 are under Ernakulam Regional Co-operative Milk Producers' Union (ERCMPU), 1211 are under Malabar Regional Co-operative Milk Producers' Union (MRCMPU).

Objectives of KCMMF

The major objectives of KCMMF are:

1. To channelize marketable surplus milk from the rural areas to urban deficit areas and to maximize the returns to the producers and provide quality milk and milk products to the consumers.
2. To carry out activities for promoting Production, Procurement, Processing, and Marketing of milk and milk products for the economic development of the farming community.
3. To provide an assured year-round market and stable price to the dairy farmers for their produce.

Fig 1.8 Structure of KCMMF



Source: KCMMF

1.10 Statement of the problem

The dairy industry in India is instrumental in providing cheap and nutritional food to the vast population of India and also generates huge employment opportunities for people in rural areas. Milk is the largest product from the agriculture and allied sector in India in terms of value at Rs.6.5 lakh crore. It is contributing around 26 per cent of total agriculture Gross Domestic Product (GDP). India's milk production was 198.4 million tonnes in 2019-20 registering a growth rate of 6.5 per cent over the previous year. The percapita availability of milk has reached a level of 394 grams per day during 2019-20 (Economic Survey Report, 2020).

Dairying is of great importance to the livelihood of farmers in Kerala. The state currently represents the twelfth largest dairy market in India. The share of livestock in Gross State Value Added (GSVA) from the agriculture sector in Kerala is above 27

percent. The livestock population in Kerala was 38.36 lakh in the year 2020 (Economic Review Report, 2020). Dairy co-operatives are functioning to support dairy farmers in the processing and selling of milk and milk products. The common need of milk producers is to obtain a fair price for their milk and this is fulfilled through collective marketing by dairy co-operatives. According to the annual report of Milma, the total number of dairy co-operatives in Kerala is increased from 3315 in 2020 to 3342 in 2021. The increasing trend of dairy co-operatives resulting the importance of dairy co-operatives among dairy farmers.

In this situation, various questions are raised about the intervention and performance of dairy co-operative societies in the dairy sector of Kerala. These include (a) Whether these co-operative societies have achieved their objectives for which they have been set up? (b) Whether the farmers are economically benefited by these co-operative societies? (c) Whether the schemes and services properly implemented for farmers? (d) what the societies did for the empowerment of dairy farmers? (e) What problems faced by the farmers from the dairy co-operatives? These and many more questions appeared when the researcher studied the literature pertaining to dairy co-operatives in the state. When considering all these situations, it is very important to understand the performance and role of dairy co-operatives for the upliftment of the dairy farmers and also to identify the constraints of farmers in the dairying. The research findings may help to frame the government policies and implications for the social and economic support for the farmers.

1.11 Objectives of the study

a) To analyze the performance of selected dairy co-operatives.
b) To evaluate the services rendered by the selected dairy co-operatives.
c) To assess the extent of utilization of services by the member farmers.
d) To assess the role of selected dairy co-operatives in the empowerment of member farmers.
e) To study the problems faced by the dairy farmers.

1.12 Scope of the study

The dairy co-operative is a collection of dairy farmers who work together to bring milk and other dairy products to the market. The functioning of the dairy co-operative is an important indicator to measure its effectiveness among dairy farmers. This evaluation helps to identify the financial, administrative, and functional status of the dairy co-operatives. So, it is essential to study the performance of dairy co-operatives to assess their impact on society. The dairy co-operatives are providing different production enhancement services to their members. This helps to improve the dairying condition of dairy farmer members. But the availability of these schemes and services is an important problem among dairy farmers. The government provides different services for the upliftment of dairy farmers. But the low accessibility and efficiency of the services creating crisis among the dairy farmers and it also discouraging the people from entering into dairy sector. So, it is important to study the awareness, participation, and effectiveness level of services provided by the selected dairy co-operatives.

The dairy co-operatives are aimed at the development of dairy farmers. Their assistance can empower the dairying as well as the living condition of members. So, it is necessary to measure the economic, social, psychological, and political empowerment level among the members through dairy co-operatives. The dairy farmers are facing various constraints in their dairy farming process. This can create a negative effect on their dairying condition. Most people are reluctant to enter dairying due to these severe constraints. So, it is important to measure, these constraints and suggest remedies for the upliftment of dairy farmers.

1.13 Limitation of the study

There are certain limitations noticed while collecting data. Some of the major limitations are as follows

1. The study area was restricted to the Palakkad district in Kerala.
2. The researcher had difficulty in collecting primary data due to COVID-19 pandemic lockdown. The majority of the respondents were Tamil speaking

farmers, Hence, with the help of volunteers and health workers, by adhering COVID-19 protocol, data collection was carried out.

3. The researcher found difficulty in collecting data related to institutions. Repeated persuasion with secretaries and presidents has not yielded any result. The institutions were reluctant to provide financial data.

1.14 Organisation of the thesis

The report of the study is organized into five chapters. The first chapter delivers a brief introduction along with the global and national scenario of the dairy sector and dairy co-operatives, statement of the problem, objectives, scope, and limitations of the study. In the second chapter, some relevant reviews are presented to the study objective which provides theoretical and conceptual orientation. The third chapter details the methodology adopted in the process of study and analysis. The observed results relating to the study are presented in the fourth chapter followed by the last chapter which summarizes the findings and conclusion.

CHAPTER II

REVIEW OF LITERATUTE

CHAPTER II

REVIEW OF LITERATURE

The research work cannot be completed without the help of the earlier researchers. The prior researches not only provide guidance but also throw some light in the direction in which any new research must proceed. Some studies have been reviewed with the intent to understand the research methodology. The review of articles linked with the dairy sector, dairy co-operatives, services offered by dairy co-operatives, utilization of services by the members, empowerment of dairy farmers, problems faced by the dairy farmers was collected and presented below;

2.1 Dairy Sector

Bharathy and Selvakumar (2013) analyzed the dairy practices and opportunities in the dairy industry in India and observed the dairy industry and its development, requirement of continuous demand in this sector. The study was conducted based on the secondary data associated with the dairy sector. He found that, due to the hike in population growth, the milk produced was sent for feeding the population and the conversion of milk into other milk products does not happen. So, there was a need to increase the productivity of milk and bring about a second white revolution by adopting the breeding of high variety milch animals, micro-level schemes, and new technology also. The dairy sector offers huge employment opportunities both directly and indirectly. If Central and State Government agrees to draft new plans to this sector, there can be incredible growth in this sector.

Lazar (2014) assessed the role of women entrepreneurs in the dairy sector with special reference to the Thrissur district of Kerala. The study was conducted in Madakkathara Panchayat of Thrissur District in Kerala with 65 dairy women farmers as respondents. The study found that the women's participation in breeding activities of dairy animals was found comparatively lesser with other activities and women were actively participated in health care activities, as they learned the things by seeing and out of experience though they were not having technical knowledge. 92.30 per cent of the milk processing activities were done by women. The entire respondents agreed that the consumption of milk was for their household purpose. The surplus milk was

supplied to the nearby houses as well as to the collection society named Madakkathara Ksheera Vyavasaya Sangam. More than 50 per cent of the respondents were satisfied with the earnings from dairy farming. But 33.84 per cent, 9.23 per cent, and 3.07 per cent of respondents were not much satisfied with the profit because of occasional diseases, lack of financial support, lack of developmental schemes, etc.

Krishnadas *et. al.* (2015) evaluated the consumption pattern of milk and milk products in rural and urban areas of Kerala. Three districts namely, Thiruvananthapuram, Thrissur, and Kasaragod each representing South Kerala, Central Kerala, and North Kerala respectively were selected for this study. The primary data was collected from 360 households. From the study, they assessed that the rural consumer spent 5 per cent of total expenditure and urban consumer spent 6 per cent of total expenditure on milk & milk products in Kerala. It means the consumers in urban areas of Kerala spent more on milk and milk products than those in rural Kerala. The expenditure on milk and milk products was found to be increased with an increase in total expenditure but the share of expenditure on milk & milk products in total expenditure was found to be decreasing.

Kunte and Patankar (2015) examined the literature reviews of the Indian dairy industry. It was a qualitative study intended to understand the issues related to the Indian dairy industry. The study was conducted based on a total of 24 articles. Which were from six geographical regions of India such as the Southern region, Western region, Northern region, North Eastern region, North – Central Region, and Eastern region. The fourteen studies out of 24 were based on primary data collected from dairy farmers (members of co-operative societies and non-members). The major issues reflected in these studies were related to the scarcity and high cost of fodder and concentrates, irregular and lack of veterinary and diagnostic services, and lack of coordination among different government agencies.

Reddy and Padmavathy (2016) investigated the growth and development of the dairy industry in India. The study was conducted based on secondary data related to the dairy sector. In this study, they found that the milk production in India was dominated by small and marginal land-holding farmers and by landless labourers who owned about 70 per cent of the national milch animal herd. Milk production in India

was increased from 17 million tonnes in 1990-91 to over 146.3 million tonnes by 2014-15. The exports of dairy products were increased from Rs. 13.98 million tonnes in 1990-91 to Rs.66,424.34 million tonnes in 2014-15. The per capita availability of milk per day was increased from 178 grams/day in 1990-91 to 322 grams/day in 2014-15. Thus, the net trade balance of dairy products had changed from negative to positive and the country was a net exporter of dairy products.

Kaur and Singla (2018) measured the growth and structural transformations in the dairy sector of India. The study was based on secondary data collected from the various publications of Central Statistical Organisation (CSO), Basic Animal Husbandry & Fisheries Statistics (BAH&FS), and various reports of livestock census for the period of 1990-1991 to 2016-17. According to the study, different states of India have responded differently to structural changes. The states like Andhra Pradesh, Gujarat, and Rajasthan having contributed rapidly to national milk production, while traditionally green revolutionary states like Punjab, Haryana, Karnataka, Maharashtra, Tamil Nadu, Madhya Pradesh, and West Bengal have, showed a decline in milk production. During the study period, the contribution of crossbred cows to milk production has steadily increased, whereas that of indigenous/local cows, buffaloes, and goats has steadily decreased. The relative contribution of expansion in livestock population was significantly larger in case of crossbred cattle and buffaloes, whereas, in the case of native cattle and goats, the contribution of yield effect was higher. The structural shift may also be seen in the milk marketing pattern, with the expansion of procurement and processing capacity by dairy co-operatives.

Parida et. al. (2018) scrutinized the role of the government in promoting the dairy sector in India. Their study confirmed that India produced 176.3 million tonnes of milk in 2017 accounting for 22 per cent of global milk production, followed by the US (12 %), Pakistan (5.5 %), and China (4.3 %). The government investment in milk production in India were not sufficient to raise the milk production. More investments were required for increasing milk production and employment prospects in this sector. This includes building dairy infrastructure for increasing milk processing and procurement and formalizing milk through co-operatives. The creation of more dairy plants to manufacture value-added milk products will be an added imperative.

Karibasavaiah and Kusugal (2019) studied the institutional support for dairying in India. The study was conducted based on secondary information. The authors highlighted that, due to the institutional support through Rashtriya Gokul Mission, semen production has increased more than 40.25 per cent substantially from 2010-14 to 2014-18. National Dairy Development Board (NDDB) has taken some steps to empower dairy farmers and improving the operations of the co-operative milk union and increase the income of dairy farmers and also conducted training and capacity building programmes under various modules for produce members, officers, and board of directors of milk unions who play a dominant role in promoting the welfare of the dairy farmers. The government has launched a programme namely, Dairy Processing and Infrastructure Development Fund (DIDF) in the year 2017-18 for doubling the income of the farmers and accelerating the efforts made under the white revolution. The institutional facilities like Automated Milk Collection Units (AMCUs), and Data Processor-Based Milk Collection Units (DPMCUS) have helped to increase fairness and transparency in milk payments.

Amin and Palash (2020) examined the determinants of structural change in the dairy sector and they detected that the world dairy changes through some variables such as; dairy product market, dairy policy, farm size, resource allocation, food consumption pattern, credit constraints. In India, 80 per cent of milk was marketed through the highly fragmented unorganized sector, comprised of local milk sellers, wholesalers, retailers, and producers. On the other hand, the organized dairy industry (government and co-operatives) accounts for 20 per cent of total milk production. As India is a large country with a massive population, the demand and new markets are being created steadily, which ultimately increases the trend of dairy production by stimulating producers to move from small to large scale. Dairy policy in most of the developing countries was inefficient and hardly changed on a requirement basis. The policy measures need to be taken care of by understanding the needs of the producers and consumers. The efficient use of resources in small dairy farms needs to be ensured by training farmers, making them capable of minimizing waste.

2.2 Dairy co-operatives

Rajendran and Mohanty (2004) observed the constraints and opportunities of dairy co-operatives and milk marketing in India. The results of the study specify that 80 per cent of the milk produced by the rural producer was handled by an unorganized sector and the remaining 20 per cent was handled by an organized sector. It was found that dairy co-operatives play a vital role in eradicating rural poverty by expanding rural milk production and marketing. The major constraints which affect the prices received by producers in milk marketing are the involvement of intermediaries; lack of bargaining power by the producers; and lack of infrastructure facilities for collection, storage, transportation, and processing. The future challenges of India's milk marketing include; milk quality, product development, infrastructure support development, and global marketing.

Manisha (2014) conducted a study on the growth of the co-operative dairy sector. The study highlights the strength, weaknesses, opportunities, threats of the Gujarat Co-operative Milk Marketing Federation (GCMMF). The daily milk procurement of GCMMF was nearly 13 million litres per day from 16914 village milk co-operative societies, 17 member unions covering 24 districts, and 3.18 million milk producer members. A large number of small and marginal dairy farmers and effective marketing channels helps were the important strengths of GCMMF. The non-existent extension facilities and lack of policy for strengthening indigenous breeds were the main weaknesses. Increasing the consumer awareness of quality reception of quality packaged products and entry of large corporations in retailing for more investment were some of the opportunities. Lack of care about quality issues in milk, the significant increase of feed prices, and high price sensitivity for dairy products were the major threats faced by GCMMF.

Bayan (2018) carried out a study titled "Impact of dairy co-operatives in smallholder dairy production systems: A case study in Assam". He found that the membership of the dairy co-operative society contributed towards improving yields of dairy animals, farm income, and employment; and also, to household milk consumption. On the other hand, it does not have a significant impact on technology adoption. The milk prices offered by dairy co-operatives were also less compared to

the prices in the market. These results indicate the need to improve dairy farmers' linkages through co-operatives or other such institutions.

Saravanadurai and Muthuaraj (2018) observed the marketing of milk through dairy co-operatives in Akkarapalayam panchayat in Tamil Nadu. Dairy farming was the secondary livelihood of the respondents. 98 per cent of the farmer had more than 5 years of experience in dairy farming. Different varieties of milch animals were maintained by the selected respondents are local breed and crossbreed. Out of 60 farmers, 34 were involved in cow rearing and the rest in buffalo rearing. Among the 34 farmers involved in cow rearing, a maximum of them produced 5 to 10 litres. In the case of buffalo milk production also, the per day production was observed to be 5 to 10 litres. The profit received through the sale of cow milk were observed to be maximum in the income group of Rs 100 - Rs 500 and income received from the sale of buffalo milk was Rs 500 - Rs 1000 per day. Milk was taken for domestic consumption which revealed that 47.00 per cent, of the farmers' household consumption of milk, was between 10 litres to 40 litres. Among the 60 respondents, 67 per cent marketed their milk to the dairy co-operative society.

Mahajan *et. al.* (2019) investigated the dairy co-operative movement in Haryana. Haryana produced 9.81 million metric tonnes of milk in 2017-18 which is 5.56 per cent of total milk production in the country even though Haryana accounts for 1.4 per cent of the total geographical area of India. The study was based on secondary data collected from various sources. The decreasing number of functional societies and relatively lower average milk procurement by them were the major area of concern. The reduction in real milk prices, as well as comparatively lower milk prices, pointed towards the relatively lower share of procurement by co-operatives in Haryana state as compared to other states.

Vijayan (2020) conducted a study on the growth prospects of dairy co-operatives for MILMA. His study found that the growth in the pouring of milk was not balanced with the growth in the sale of milk during the period of study. Only 14 per cent of the total member farmers were supplying milk to the dairy co-operatives. A huge amount spent by the federation for implementing welfare schemes has not created a positive impact on the growth of milk pouring. The federation has to adopt certain criteria to

provide such welfare benefits to attract the lost member farmers, which will help the federation to achieve the objectives of the welfare schemes.

2.3 Performance of dairy co-operatives

Kale *et al.* (2000) studied the financial position working and operational efficiency of 23 dairy co-operatives in Raigad district of Maharashtra. They studied the economic efficiency through income-expenditure ratio, expenditure-income ratio, rate of return on capital, and rate of turnover. They concluded that the societies had low owned capital and were dependent on borrowings from financial institutions. Even though the working capital of the dairy co-operatives was low, their turnover was high because dairy cooperative did not make payment to milk producers from their own funds, therefore, dairy cooperatives were able to carry on their business with limited capital; and majority of the societies were earned high profit.

Singh (2008) studied the performance of Punjab Cooperative Sugar Federation Ltd. (Sugarfed). He employed financial ratio analysis as an indicator to evaluate financial performance of the federation. He studied different ratios such as gross profit ratio, net profit ratio, inventory turnover ratio, working capital ratio and interest coverage ratio of 15 cooperative sugar mills under the federation in Punjab. The secondary data for the period 2001-02 to 2006-07 was collected from the cooperative sugar mills. The tables, graphs and bar diagrams have also been used for the purpose of this study. The study concluded that most of the sugar mills 'ratios are negative. Hence, the financial performance of these mills has not been good. Out of 15 mills, 7 mills are already closed and many others may be closed in future.

Chandrashekhar (2015) studied financial performance of urban co-operative banks in India for the period of 10 years from 2004 to 2013. The study is based on secondary data. The study focused more on growth of urban co-operative banks in India and Karnataka, investments by urban co-operative banks in India, financial performance of schedule and non-schedule bank and on priority sector lending. Analysis of data was done by using compound growth rate, percentage, average, standard deviation, coefficient of variance. Study revealed that the total business of urban co-operative banks showed a steady increase during the study period, with

respect to investments. It was observed that the highest investment is done in central government securities. Study witnessed that the bank had deployed considerable credit to priority and weaker section.

Radhika (2015) in her research article studied financial performance with respect to loan and advances of Sree Charan Souharbha Co-operative Bank Ltd. for the period three years from 2012 to 2014. Study focused on the growth of advances on deposits and loans on bill discounting. The study revealed that lending is increased during the study period, but not up to the desired higher level, since bank grant loan to quality borrowers. The loan was seen continuously increasing when compared to deposits. However, the advances on bills discounting remained stable during the study period. Result depicts that the performance of bank with respect to loan and advances was comparatively good even in prevailing highly competitive environment.

Vinaikumar and Veerakumaran (2015) analyzed the financial performance of the Vilvattam Service Co-operative Bank with regard to Efficiency in mobilization, deployment, operating and liquidity management. The study is based on secondary data and cover a period of ten years from 2003-04 to 2012-13. The data were analyzed using ratios. Compound annual growth rate was used to study the growth of select variables. The study revealed that owned fund to borrowed fund declined during the study period showing overall negative growth of -8.39 percent. Deposit to working capital ratio and Deposit position of the bank depicted increasing trend however study of composition of deposits showed that bank rely heavily on high-cost deposits whereas composition of loans showed that medium term and ordinary loan have high contribution in total loan, credit to deposits ratio, loan to working capital ratio depicted fluctuating trend. However, positive sign is observed with regard to recovery performance. Spread to total fund ratio was found to be low as well as fluctuating. Profitability ratios, manpower expenses to total expenses ratio showed negative trend during the study period. Liquidity funds are maintained as per statutory norms. The low profitability denotes the inefficiency of the bank in mobilization and deployment of funds.

Latha and Ganesan (2017) evaluated the performance of MILMA. The main aim was to analyze the performance of milk procurement and sales of MILMA in Kerala.

The study was based on secondary data collected from MILMA annual reports. They found that the total numbers of registered societies were 3239, of which 2891 societies were functioning in Kerala. It was observed that among the three unions, ERCMPU procurement has the highest growth rate (72.03 %) per day. The demand for milk was increasing day by day and the sale of MILMA milk also showed an improvement. The sales of milk in all the variants showed an increase in the year 2015-16 also showing the consumers' continued confidence in MILMA. It was found that the MRCMPU sales have the highest growth rate (21.30 %), followed by ERCMPU growth rate of 16.82.73% and TRCMPU procurement has the least growth rate of 8.74%.

Salunkhe and Waykole (2017) studied financial performance of select women credit co-operatives in Dhule region/ district for the period of eight years from 2000-01 to 2007-08. The study is based on primary and secondary data. Data were analyzed using statistical tools like percentage, graphs and MS excel. The performance parameters considered for study include share capital, working capital, deposits, loan, investments, profit, reserve fund and audit class. The study revealed that fixed deposits, daily collection and loan are the major business activities of the select credit cooperatives. Societies are regularly performing the task of deployment of credit to its members. Loan recovery position of 51% of the societies was found good and it was observed that they are regular in distributing dividend to their members. Result of primary survey revealed that the select co-operatives conduct elections regularly in a transparent way. Majority of the respondents opined those members are happy with the 42 working and performance of the select credit co-operatives and societies are performing very well on select financial parameters.

2.4 Services rendered by dairy co-operatives

Singh and Sharma (2009) measured the input facilities received by the members of dairy co-operative societies from the Udaipur dairy union in Southern Rajasthan. The study was based on "Udaipur Zila Dugdh Utpadak Sahakari Sangh Limited, Udaipur" (Udaipur dairy union). The Udaipur dairy union consists of 23 milk procurement units. Out of these six milk units were selected randomly. The majority of dairy co-operative society members (64.17%) received the supply of input facilities to the medium level from personnel of dairy union. It was further concluded that the

Udaipur dairy union benefited members of dairy co-operative societies by introducing various input facility programmes associated with breeding, feeding, health care, and management of dairy animals. The range of input facilities received by the dairy members was from 12.50 to 100.00 per cent in all the aspects of input services provided by the dairy union.

Tamizhkumaran and Radhakrishnan (2016) observed the preference of dairy farmers in availing doorstep veterinary services in Puducherry. The study was conducted among 160 dairy farmers of the Puducherry region. The dairy farmers availed three major services viz., Clinical services - treatment, Breeding Services - Artificial Insemination (AI) and Information services - scientific cattle rearing, advice on management, etc. Majority of the respondents (78 %) were satisfied with the delivery of veterinary services. However, 22 per cent of the respondents stated that there was a delay in the arrival of veterinarians to attend cases. The preference of the dairy farmers was mainly based on the time, money, and accessibility of the service provider. As the dairy farmers get their services at their doorstep and the veterinarian, in turn, gets paid for his service, the majority of the dairy farmer respondents were satisfied with the delivery of veterinary services by the service providers.

Koyi (2020) studied the role of dairy co-operative societies in sustainable dairy development in Kenya. The dairy co-operative managers, livestock production officials, government co-operative officers, and dairy co-operative members were all interviewed for the study. The findings revealed that the advantages of dairy co-operative organizations to small holder farmers not fairly distributed. Access to information, capacity to save and budgeting or planning received middle scores, whereas access to information, ability to save, and budgeting/planning received the lowest rankings. The dairy co-operatives in Kenya primarily provided milk marketing and milk collecting services. The cow insurance, on the other hand, was not widely available. The analysis of dairy co-operatives in Kenya revealed that usage of existing opportunities and strengths among dairy co-operatives would enhance the dairy sector's sustainable development.

2.5 Extent of utilisation of services by members

Nishi and Kumar (2011) examined dairy farmers' satisfaction with dairy co-operative societies in Uttar Pradesh. The study was conducted by covering eight selected dairy co-operative societies in Pradeshik Co-operative Dairy Federation (PCDF), Uttar Pradesh. The high quantity of milk produced and sold by member farmers to the societies shows the commercial capability of dairy farming in the area. About one-third of the respondents were happy with the working of societies. The majority of member farmers were not interested in participating in different activities of the dairy co-operative societies. A good per cent of member farmers (22.50 %) expressed high satisfaction with the societies, whereas 15 per cent, 51.25 per cent, and 11.25 per cent of the respondents expressed low, moderate, and very high levels of satisfaction respectively, with the working of dairy co-operative societies.

Priscilla *et. al.* (2017) carried out a study titled 'participation behavior of dairy farmers in dairy co-operative societies in Manipur'. The results indicated that while age and technical efficiency factors were positively related to the proportion of milk sold by the member farmers to dairy co-operative societies, dairy farming experience, and milk production had a negative impact. Dairy farmers with lesser herd sizes tend to participate more in dairy co-operatives. To earn the benefits of dairy co-operatives, the young and innovative individuals should be inspired to take up dairying and join the co-operatives. Locally suitable exotic breeds should be popularised and made easily accessible to the farmers through various measures like artificial insemination. This will also enable higher milk production which positively influences the choice to join in dairy co-operative societies.

Simranjit *et. al.* (2017) studied the perception of member dairy farmers about animal health care services and input facilities provided by Milkfed in Punjab. The study was conducted to evaluate the response of dairy farmers about the timely availability of technical and extension services provided by milkfed in the Amritsar, Bathinda, and Ludhiana districts of Punjab. The result highlighted that overall, 93.78 per cent of the dairy farmers from Amritsar, Bathinda, and Ludhiana districts replied that the milkfed provides them technical services along with different kinds of products and medicines at the supported rates. Apart from the routine services provided by

milkfed, 30.22 per cent and 32.89 per cent member farmers answered that milkfed also provide them green fodder seeds and bonus at the end of the year. It has been reported in the study that dairy farmers from Bathinda and Ludhiana districts were satisfied with the services provided to them by milkfed whereas dairy farmers from Amritsar district seemed to be unsatisfied with the facilities provided by Milkfed. The results of the study suggest that milkfed has to develop a widespread extension system, especially in the Amritsar district to promote the latest farming practices among its members' farmers.

Kad *et. al.* (2020) examined the dairy farmer's attitude towards the Kamdhenu Dattak Gram Yojana on dairy development in Maharashtra. A total of 120 farmer respondents were selected for the study from the Pune and Nashik divisions of Maharashtra. The findings of the study inferred that all the beneficiaries had a positive attitude towards the Kamdhenu Dattak Gram Yojana. About 47.67 and 25.83 per cent of the beneficiaries had favourable and more favourable attitudes towards Kamdhenu Dattak Gram Yojana, respectively. The overall attitude of farmers was favourable towards the scheme. The findings clearly indicated the positive and significant success of Kamdhenu Dattak Gram Yojana in the adopted villages. The participation of all the stakeholders has ensured a positive attitude development among farmers towards dairy farming.

2.6 Empowerment of dairy farmers

Gosh and Mahanjan (2001) evaluated the impact of dairy co-operative on rural income generation in Bangladesh. The findings of this study revealed that dairying was the predominant occupation among the study dairy co-operative members. Another trend observed in the study area was the diversification of income sources. The rural households have secondary and tertiary occupations. Dairy co-operatives in Bangladesh have provided a viable means of income generation. It has been continually providing cash income to those living in rural areas.

Khan *et. al.* (2014) conducted a study on “Role of dairy co-operatives in the socio-economic development of dairy farmers in Moradabad district-UP”. The study was based on primary as well as secondary data. The study shows that around 60 per cent of the total production of milk was being handled through the dairy co-operatives

in the selected villages. The regular payments, essential medical support, and high demand for milk have resulted in the socio-economic development of the people involved in dairy farming in the Moradabad district. The participation of women in the marketing of milk has taken place in the sampled village. Thus, dairy co-operatives have developed as a source of service generation, efficient milk marketing, and socio-economic development of dairy farmers.

Sreenivasaiah and Chellakumar (2016) investigated the role of milk co-operatives in the village development of Karnataka state. They intended to study the role of the milk co-operatives in village development through the recovery and growth of the general dairy chain in Karnataka. The study highlighted that Karnataka with milk production of 4.10 metric tonnes was the 11th largest milk-producing state in 2014, constituting about 5 per cent of the country's total milk production. The number of milk co-operatives in Karnataka has enlarged from 8266 in the year 2004-05 to 12320 in the year 2013-14 and 5235 rural-based employment opportunities were created in the year 2013-14. Also, the number women milk co-operatives were 1245 in the year 2004-05 and it is got increased to 3007 in the year 2013 -14. The dairy farmer co-operative system has been proved to be an active vehicle for livestock expansion in general and dairy development in particular in rural areas.

Niketha *et. al.* (2017) assessed the women empowerment level through women dairy co-operatives (WDC). The sample of the study consisted of 6 WDCs and 240 WDC respondents in total. Majority of the respondents had a medium level of social, cultural, psychological, economic, and technical empowerment, whereas the majority had a low level of legal and political empowerment. The psychological component of empowerment was reported to be the strongest, while the political component was found to be the lowest. Dairy women's empowerment was found to be positive and highly significantly linked with herd size, milk productivity, milk sale, earnings from dairying, social engagement, training received, and information-seeking behaviour. The regression model revealed that social involvement, training, and information-seeking behaviour were all the important factors in women's empowerment. WDC's contribution is much valued, and it may be recreated in other regions of the country.

Dash *et. al.* (2020) studies about "Role of dairy cooperative society in empowering women in rural Odisha" among selected women milk producers who associated with Siddheswari Women Milk producers' Co-operative Society which was affiliated to Puri Milk Union (PUMUL) in Puri district of Odisha. According to the respondents, the women's socio-economic condition has improved significantly, since joining the co-operative organization of women milk producers. The main constraints they faced were dairy animal illness, high cost of cattle feed and shortage of hybrid cows in the local market, and lack of funds to develop the farm, and low profitability in the dairy industry. The most important reasons for these women entering co-operative societies include employment at home, flexibility in time, increased family income, improved social standing, better education for children, and market access and economic independence. Dairy farming was occupied as a business by women in rural Odisha after they joined dairy co-operative groups. As a result, women's dairy co-operatives play an important role in providing employment and income for member dairy farmers, resulting in rural women's empowerment.

Prajapati (2021) analyzed the socio-economic empowerment of member dairy farmers through dairy co-operatives. According to the findings, dairy co-operatives played a significant role in the social and economic development of Mehsana district dairy producers. Dairy farmers in Gujarat contributed substantially to the dairy industry, and their participation showed an essential instrument for reducing poverty and improving the rural community's quality of life. The personal income, the purchase of immovable properties, access to family resources, personal insurance, and trust in financial transactions also got increased after joining dairy co-operatives. Respect from family members, respect from relatives, leadership characteristics, communication ability, and understanding of government programmes have all grown as a result of joining the dairy co-operative. It demonstrates the importance of dairy co-operatives in the social and economic growth of dairy producers in Mehsana.

2.7 Problems faced by dairy farmers

Makwana and Modi (2016) examined the constraints of milk production on co-operative and non-co-operative dairy farms in the Kheda district of Gujarat. The major constraints faced by milk producer households from both the farms were: the absence

of training facility, inaccessibility of veterinary services, inadequate cattle feed, delay in payment of milk. high rate of veterinary service, low provision of bonus, lack of cold storage capacity, less knowledge about marketing, low purchasing power, poor information about artificial insemination, lack of technical direction. The study exhibited that non-co-operative farms faced major constraints with high severity as compared to co-operative farms in expanding milk production.

Prasad *et. al.* (2017) observed the socio-economic profile and constraints faced by dairy farmers of the Wayanad district of Kerala. The study was conducted to study the different patterns of rearing of dairy animals, crops grown, and the status of milk production. The major limitations faced by dairy farmers were low price offered for milk, frequent illness outbreaks, in accessibility of fodder while four per cent of the farmers were satisfied with their current farming condition.

Sreeram *et. al.* (2018) analyzed the constraints perceived by dairy farmers of Kerala State. The results displayed that increased price of cattle feed, non-remunerative price of milk, high cost of credit, inaccessibility of essential manpower for cattle health care, unavailability of dry and green fodder was some of the important constraints reported by the majority of the respondents. The study highlighted the practical role that the milk co-operatives played in supporting the farmers, and emphasized the necessity to support in developing dairy value chains which would benefit the producers in unique ways.

Pant *et. al.* (2019) evaluated the problems and prospects of dairy farming in the Almora district of Uttarakhand. Imbalanced diet and lack of proper nutrients into animals, poor amount of milk by animals, lack of milk transportation facilities, lack of standard pricing system, absence of marketing system, absence of storage and processing facilities, exploitation by middlemen, absence of credit and loan facilities, lack of information and awareness and less interest of people towards dairy were the key difficulties faced by dairy farmers in Almora district.

Gamit et. al. (2020) examined the constraint faced by dairy farmers in the different states of India. The study revealed that lack of green fodder, high feed cost, poor Artificial Insemination were major constraints in northern states. Eastern states mostly have opposed climatic conditions and the main constraints are lack of green

silage, problems of infertility in cattle, non-availability of artificial insemination (AI) centres, high cost of treatment. The north-eastern region was the typically hilly region, dairy farmers observed low price of milk, lack in the availability of green fodder, repeat breeding, and inappropriate treatment services are the major constraints. Central states which include the largest number of Indian dairy farmers, there are faced problems like low price of milk, farmers do not have superior animals, low producing local cows, poor quality feed and fodders. Similarly, in western states, poor irrigation facilities, lack of accessibility of veterinary services, and insufficient knowledge of diseases were major constraints. The high cost of dairy animals, fodder, and concentrate, poor conception rate of AI and high cost of labour and veterinary service were the major constraints faced in Southern states.

CHAPTER III

MATERIALS AND METHODS

CHAPTER III

MATERIALS AND METHODS

The study entitled “Institutional intervention by dairy co-operatives in Palakkad district” has been carried out with the objectives of analyzing the performance of selected dairy co-operatives in Palakkad district, to evaluate the services rendered by the selected dairy co-operatives, to assess the extent of utilization of services by the member farmers, to assess the role of selected dairy co-operatives in the empowerment of member farmers, to study the problems faced by the dairy farmers. This chapter deals with the portrayal of the study area, the sampling procedure followed, and techniques used for data analysis, which are presented as follows.

3.1 Concepts used in the study

The major concepts used in the study are explained below:

3.1.1 Cattle

Cattle are the animals reared by the dairy farmer respondents.

3.1.2 Dairy Farmer

The respondents having dairying as primary occupation.

3.1.3 Active Members

The dairy farmer members with Minimum number of days of pouring to be not less than 180 days and 500 litres of milk to be poured in a year.

3.1.4 Milk Procurement

The process of collecting milk from dairy farmers by dairy co-operative societies.

3.1.5 Co-operative Governance

The act of steering co-operatively owned organizations towards economic, social and cultural success.

3.1.6 Solid-Not-Fat (SNF)

The meaning of SNF in milk is Solid-Not-Fat. The substances in milk other than water and butterfat are termed as Solids-Not-Fat (SNF). It is a residual component left after the complete evaporation of water from milk.

3.1.7 Dairy input services

Services provided by the dairy co-operative societies to its member farmers to have a better output (production).

3.1.8 Administrative problems

Administration refers to the group of individuals who are in charge of creating and enforcing rules and regulations, or those in leadership positions who complete important tasks. Any hurdles that come in the process of administration are considered as administrative problems.

3.1.9 Structural problems

Structure is the framework within which an organization function. The internal as well as external factors which hinder the framework are considered as structural problems.

3.1.10 Functional problems

Problems which may occur while carrying out the functions of the society are called functional problems.

3.1.11 Political issues

For the study, the problems faced by the society related to politics are termed as political issues.

3.1.12 Legal issues

The issue arises due to the violation of act and rules prescribed in the byelaw of the society are termed as legal issues.

3.1.13 Human resource problems

Human resource can be defined as the set of people who make up the workforce of an organization, business sector, industry, or an economy. Any problems which affect the work force of the society is termed as human resource problems.

3.2 Institution selected for the study

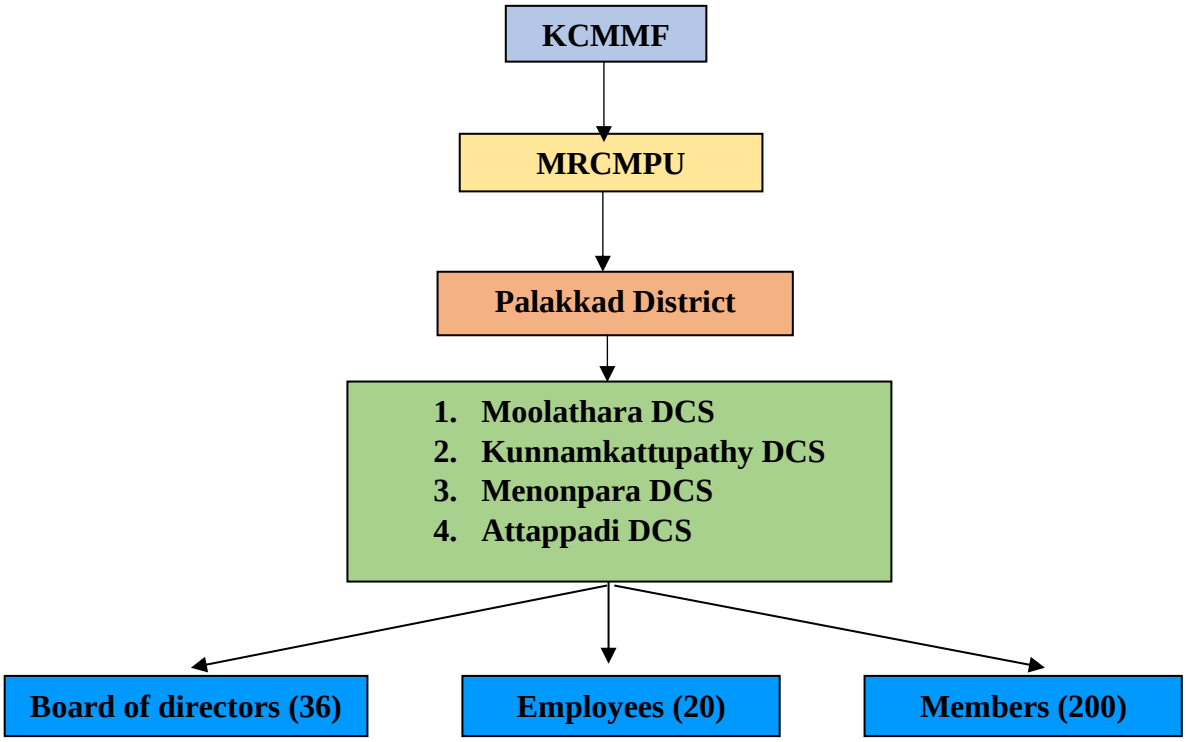
The four dairy co-operative societies having the highest quantity of milk procurement during 2019-2020 in Palakkad district were selected for this study. The selected dairy co-operative societies for the study are,

1. Moolathara Ksheerolpadaka Sahakarana Sangam Ltd. No. P 65 (D)
2. Kunnamkattupathy Ksheerolpadaka Sahakarana Sangam Ltd. No. P 126 (D)
3. Menonpara Ksheerolpadaka Sahakarana Sangam Ltd. No. P 281 (D)
4. Attappadi Ksheerolpadaka Sahakarana Sangam Ltd. No. P 558 (D)

3.3 Sources of data

Both primary and secondary data were used for the study.

3.4 Sample design



In KCMMF, the highest quantity of milk was procured by Malabar Regional Co-operative Milk Producers' Union (MRCMPU). The area of operation of Malabar Regional Co-operative Milk Producers' Union comprises of the six revenue districts of North Kerala, namely Kasaragod, Kannur, Wayanad, Kozhikode, Malappuram and Palakkad. The study was conducted in Palakkad district which represents the highest quantity of milk procurement in Malabar region, during the year 2018-19 (KCMMF Annual Report). In Palakkad district, 324 dairy co-operatives were functioning (Dairy Development Department).

Four dairy co-operatives having the highest quantity of milk procurement during 2019-2020 in Palakkad district were selected for this study. Both primary and secondary data were collected for the study. Primary data were collected using a structured interview schedule from all the executive committee members (36), employees (20) and selected active members (200) of the selected dairy co-operative societies in the month July 2021. The responses to the questions of 2^{nd}, 3^{rd} and 4^{th} objectives were plotted on five-point and 5^{th} objective on three-point Likert scale. The scores assigned to these ratings were 5, 4, 3, 2 and 1. The data for evaluating the performance of selected dairy co-operative societies were collected from the annual and audit reports of the society from the year 2010-11 to 2019-20. CAGR, growth index, percentage analysis and indices were used in the study.

3.5 Critical variables for the study

Objective wise variables used for the study are listed below:

i) To analyze the performance of selected dairy co-operatives

- ✓ Profile of selected dairy co-operatives
- ✓ Farmer Member participation
- ✓ Financial indicators
- ✓ Structural factors
- ✓ Managerial factors
- ✓ Legal, political, and technological factors

ii) To evaluate the services rendered by the selected dairy co-operatives

- ✓ Production enhancement services
- ✓ Training and information to members

- ✓ Schemes and support from dairy co-operatives during flood and Covid-19.

iii) To assess the extent of utilization of services by the member farmers

- ✓ Awareness level about services
- ✓ Frequency of participation
- ✓ Level of utilization of services
- ✓ Effectiveness of services

iv) To assess the role of selected dairy co-operatives in the empowerment of member farmers

- ✓ Economic empowerment
- ✓ Social empowerment
- ✓ Psychological Empowerment
- ✓ Political empowerment

v) To study the problems faced by the dairy farmers

- ✓ Milk production and procurement
- ✓ Pre and post flood effect in milk production and procurement
- ✓ Impact of Covid-19 in dairy farmers
- ✓ Constraints experienced by farmers in availing schemes and support from dairy co-operatives
- ✓ Government policies

3.6 Statistical tools used for the study

The analysis of the collected data was conducted with the help of statistical tool like CAGR, growth index, percentage analysis and indices.

3.6.1 Growth index

Growth index is a technique used in financial ratios to analyze the growth of a company compared to previous years.

$$\text{Growth index} = \frac{\text{Present value} - \text{Base value}}{\text{Base value}} * 100$$

3.6.2 Percentage analysis

Percentage distribution of respondents in different categories on all variables was worked out by dividing the frequency in each category with total number of respondents and multiplying it by 100.

3.6.3 Index

The evaluation of services rendered by the selected dairy co-operatives, the extent of utilization of services by the member farmers, assessment of role of selected dairy co-operatives in the empowerment of member farmers were measured based on a five-point Likert scale. The formula is as follows:

$$\text{Index} = \frac{\sum_{i=1}\sum_{j=1} S_{ij}}{\sum \text{Max}S_j}$$

i = respondents

j = problems/constrain

S_j = Score of j^{th} factor

S_{ij} = Total score of j^{th} factor of the i^{th} respondent

$Max.S_{ij}$ = Maximum score for the j^{th} factor

Based on the index obtained, the results were compared to a standard derived:

a) Five-point Scale

Scores obtained	Problems/Constrains category	Colour classification
0-20	Very Low	
21-40	Low	
41-60	Moderately High	
61-80	High	
81-100	Very High	

b) Three-point scale

Scores obtained	Problems/Constrains category	Colour classification
0-33.3	Nil	
33.3-66.6	Moderate	
66-6-100	High	

Based on the above materials and methods, the objectives of the study were analyzed and discussed in Chapter IV.

CHAPTER IV

RESULTS AND DISCUSSION

CHAPTER IV

RESULTS AND DISCUSSION

The following section deals with the results and discussions on the topic "Institutional intervention by dairy co-operatives in Palakkad district" undertaken with the following objectives:

(i) To analyze the performance of selected dairy co-operatives in the Palakkad district
(ii) To evaluate the services rendered by the selected dairy co-operatives
(iii) To assess the extent of utilization of services by the member farmers
(iv) To assess the role of selected dairy co-operatives in the empowerment of member farmers
(v) To study the problems faced by the dairy farmers.

As an introduction to the study, the profile of selected dairy farmer respondents and four selected dairy co-operatives is given below.

4.1 Profile of selected dairy farmer respondents

Dairy farmers are the major respondents of the study. Two hundred active dairy farmers were selected from four dairy co-operative societies. The following table explains the basic information of selected dairy farmers. This will give an outline about the dairy farmers.

Table 4.1 Profile of selected dairy farmer respondents (N=200)

Sl. No.	Particulars	Results
1	Age	>30 = 10 (5 %)
		30-45 = 69 (34.5 %)
		45-60 =111 (55.5 %)
		>60 = 10 (5 %)
2	Gender	Female = 34 (17 %)
		Male= 166 (83 %)
3	Religion	Hindu = 191 (95.5 %)
		Christian = 9 (4.5 %)

4	**Community**	**General = 9 (45 %)**
		SC/ST = 12 (6 %)
		OBC = 179 (89.5 %)
5	**Education**	**Primary Education = 149 (74.5%)**
		SSLC = 27 (13.5 %)
		HSS = 19 (9.5 %)
		UG = 5 (2.5 %)
6	**Type of family**	**Nuclear family = 166 (83 %)**
		Joint family = 34 (17 %)
7	**Type of house**	**Tiled = 178 (89 %)**
		Terraced = 22 (11 %)
8	**Secondary occupation**	**Agriculture = 158**
		Business = 13
		Driver = 13
9	**Land ownership**	**<3 acre = 39 (19.5 %)**
		3 to 5 acres = 98 (49 %)
		<5 acre = 63 (31.5 %)
10	**Number of owned cattle**	**<20 = 35 (17.5 %)**
		20-30 = 122 (61 %)
		30-40 = 33 (16.5 %)
		>40 = 10 (5 %)
11	**Milk production**	**>150 = 61 (30.5 %)**
		150-250 = 79 (39.5 %)
		250-350 = 31 (15.5 %)
		350-450 = 25 (12.5 %)
		>450 = 4 (2 %)

Source: Primary Data

Table 4.1 explained the general profile of selected dairy farmer respondents. The profile includes age, gender, religion, education, social class, type of family, type of

house, secondary occupation, land ownership, number of owned cattle, and milk production.

Out of 200 respondents, 111 (55.5%) were categorized under the 45 to 60 age group. Most of the members of four dairy co-operative societies were in the middle-aged category. It shows the interest of middle-aged people in dairy farming. The second-largest group of dairy farmers was in the age group of 30 to 45 (34.5%). The Participation of youth and aged respondents were only 5 per cent.

Among 200 dairy farmers, 166 (83%) were male and 34 (17%) were female. It indicates that the contribution of males was more in dairy farming compared to females. It indicates the interest of males in dairy farming compared to females.

Out of 200 farmers, 191 (95.5%) farmers were in the Hindu religion and 9 (4.5%) farmers were in the Christian religion. There were no farmers among the respondents other than these religions. The composition of respondents to religion shows the demographic structure of the Palakkad district in Kerala. The finding shows that the Hindus were actively participating in dairy farming. As it is also reflecting the combination of religious groups in the study area.

Out of 200 dairy farmers, 149 (74.5%) were having primary education. A total of 46 (23%) farmers were having SSLC and HSS level education. Only 5 (2.5%) farmers were having graduate-level education. This analysis reveals the fact that the educated are not interested in dairy farming.

Among 200 dairy farmers, 179 farmers (89.5%) were included in the Other Backward Class (OBC) category. Only 12 (6%) and 9 (4.5%) farmers were in SC/ST and General category respectively. The general category was least in all dairy co-operatives. The OBC class mainly includes the Gounder community.

Out of 200 respondents, 166 farmers (83%) were having nuclear family and only 34 farmers (17%) had joint families. The data indicates that the people in Kerala, particularly in the Palakkad district would like to lead a nuclear family life.

Out of 200 farmers, 179 (89%) farmers have Tile roofed houses, and only 22 (11%) farmers with terrace roofed houses. From the result, we can find that most of the dairy farmers were living in tile-roofed houses, which reflects their living style.

Out of 200 dairy farmers, 158 were dependent on agriculture. The 13 dairy farmers were doing business and the other 13 were working as drivers. The business activities include different types of small shops in their local areas such as vegetable shops, Stationery shops, Flower shops, etc. From the result, we can interpret that, agriculture was the secondary income generating sector of most dairy farmers.

Out of 200 dairy farmers, 161 (80.5%) farmers were having a land size of more than 3 acres. The farmers with less than 3 acres were less in number (39 farmers). The land is an important asset for dairy farmers. Because most of them were depending on agriculture as a secondary occupation.

Most of the dairy farmers (61%) owned 20 to 30 cattle. Only 10 farmers (5%) had more than 50 cattle. And 33 farmers (16.5%) were owned cattle between 30 and 50. That eventually reflects in the production and procurement of milk by the selected dairy co-operative societies.

Out of the 200 dairy farmers, 79 (39.5%) and 61 farmers (30.5%) had milk production between 150 to 250 litres and below 150 litres respectively. Only 4 farmers (2%) have milk production above 450 litres in a day. 15.5 % (31 farmers) of the dairy farmers were produced 250 to 350 litres of milk to the dairy co-operative society. The 2.5 % (25 farmers) of them had milk production between 350 to 450 litres.

4.2 Dairy co-operatives

The organizational details were collected from the four selected dairy co-operatives namely

1. Moolathara Ksheerolpadaka Sahakarana Sangam Ltd. No. P 65 (D)
2. Kunnamkattupathy Ksheerolpadaka Sahakarana Sangam Ltd. No. P 126 (D)
3. Menonpara Ksheerolpadaka Sahakarana Sangam Ltd. No. P 281 (D)
4. Attappadi Ksheerolpadaka Sahakarana Sangam Ltd. No. P 558 (D)

4.2.1 The objectives of dairy co-operative societies

The main objective of the dairy co-operative society is to procure the milk from the members and preserve the quality of milk and its sale to the affiliated milk union and local consumers. This will help to empower the dairy farmers. The other objectives of the dairy co-operatives are listed below:

1. To provide guidance and assistance to the members to undertake efficient milk production practices.
2. To undertake educational programmes, extension services aimed at dissemination on advancements in animal husbandry, dairying to the members.
3. To provide or arrange to provide technical and managerial services in the areas of breeding, feed/fodder, veterinary services to increase milk production.
4. To facilitate an extension of various financial services availed from various financial institutions to the members of the society but not to stand guarantee to members' liability.
5. To purchase, rent or lease land, buildings, or any other services for the society.
6. To take up all other allied activities for carrying out the above objectives for the overall development of dairying.

The relevance of dairy co-operatives in the growth of the dairy sector is demonstrated by the objectives listed above. This would increase member involvement in dairy co-operative societies, resulting in total dairy sector growth in the country.

4.2.2 Books and records maintained in the Dairy co-operative societies

The dairy co-operative needs to have a systematic way of maintaining records and files. The accurate and complete records enable a dairy co-operative society to identify all its business assets, liability, income, and expenses. The records can be classified into the following group.

Table 4.2 Records maintained by the dairy co-operatives

Sl. No.	Records	Purpose
A- Organizational Records		
1	Membership register	The details of each member of the Society are recorded.
2	Share ledger	The details of shares purchased by members of the society are recorded.

3	Bonus and dividend register	The details of milk business made by a member in one year along with the record of bonus and dividend paid to a member in one year.
4	Audit report	This is a document issued by the auditor regarding the financial statements of the dairy co-operative society.
B- Financial Records		
1	Cashbook	This is the book where all transactions including cash, credit, counter entries are made i.e., daily financial transactions of the society are recorded.
2	General ledger	To record daily transactions under separate heads.
3	Payment register	The details of milk payments made to the producers are recorded.
C- Procurement Records		
1	Milk purchase register	To record the quality and quantity of milk supplied by the producer and the price paid/ payable to them.
2	Milk producers' passbook	To record the quality and quantity of milk supplied by the producer and the price paid/ payable to him for milk. The members are the holders of the passbook.
4	Milk producers' ledger	To record the milk supplied by an individual producer during the period of his membership.
5	Local milk sale register	To record the local sales of milk by the society in each shift along with the price.
6	Dairy register	This record provides ready and complete information about all operations along with the economics of the business.
D- General Miscellaneous Records		
1	Indent book	This book is mainly used for requesting the union to supply different materials.

2	Stock cum purchase register	To record all purchases and stocks of material along with issues and balances.
3	Cattle feed cum sale register	To record all purchases, opening, and closing of stock and sales of cattle feed, ghee, or other such items. It is used in preparing final accounts also.
4	Society letterhead	Required for official communication with the union, bank, and other agencies.

Source: Primary data.

4.2.3 Organizational structure of Dairy co-operative societies

General Body:

The general body of the society has ultimate authority and is expected to meet once in a year. The participants in the general body meeting include all the active and non-active members of the dairy co-operative society. The general body meeting takes all the decisions related to the functioning of society. These meetings are held annually, namely the Annual General Body Meeting (AGM). The Board of Directors of the dairy co-operative society was elected by the general body.

Board of Directors:

The general body is the authority that elects the Board of Directors. There are 9 members on the Board. Board of Directors were elected from the active members. Out of which, one seat is reserved for SC/ST category and one seat for women. The tenure of BOD is 5 years.

President:

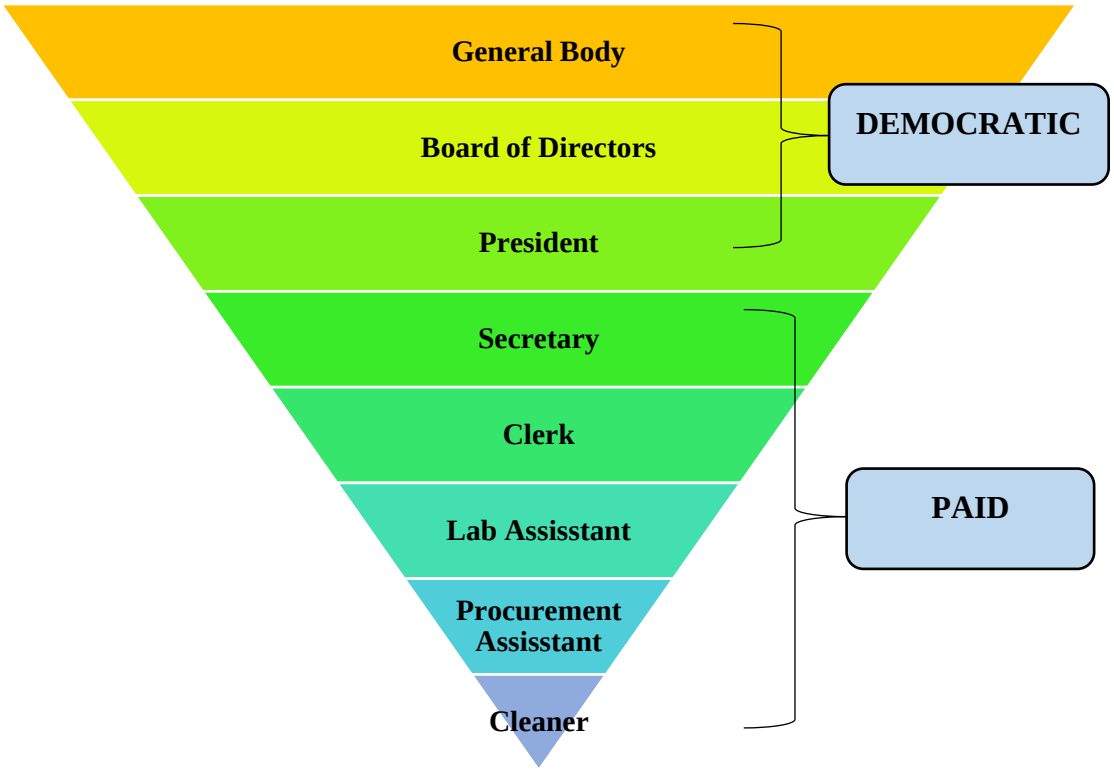
The president shall have general control over the affairs of the society. He shall be an ex-officio member of society. The term of office of the President shall be five years. He shall preside over the meetings of the general body and Board of Directors.

Secretary & Other Employees:

The Secretary is a paid employee of the society shall be responsible for the executive administration of the society, subject to the control of the president, and shall

be the custodian of the cash. Other than the secretary, all the societies have 4 permanent employees namely Clerk, Lab Assistant, Procurement assistant, and cleaner.

Fig. 4.1 Organizational Structure of dairy co-operatives



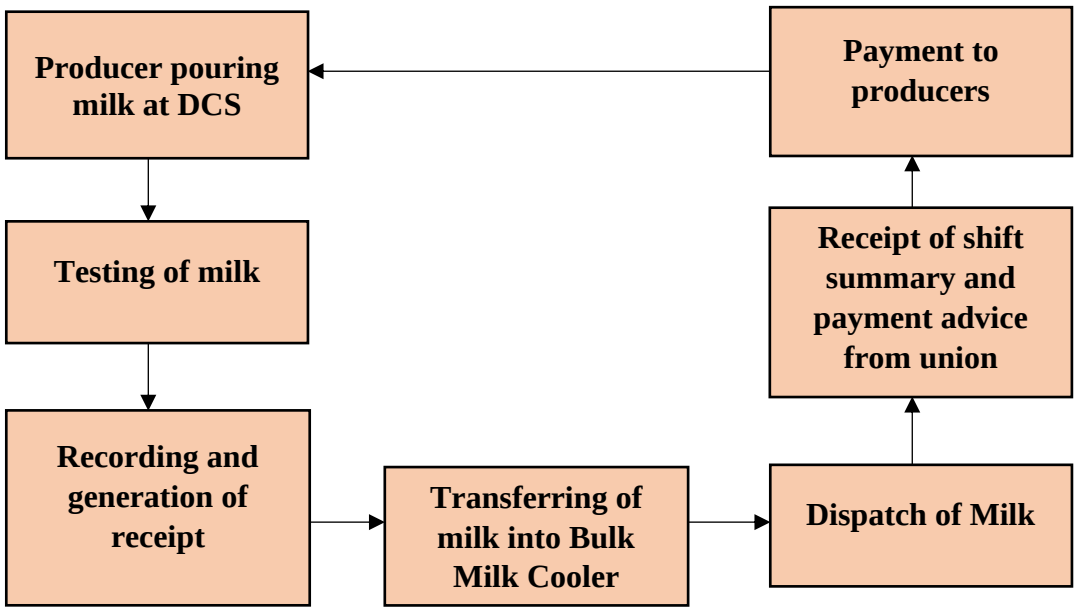
Source: Primary data

4.2.4 Method of milk testing

Milk Analyzer is an analytical device specifically dedicated to the analysis of milk. Milk analyzer installed to detect or to quantify various components or characteristics in milk such as %age of fat, Solid Not Fat (SNF), water, etc. “Ekomilk Ultra Pro Analyzer” is the milk testing equipment used by the dairy co-operative societies. It is an ultrasonic milk analyzer for testing fat, SNF, and added water in milk. It will test 120 samples (27 seconds per sample) of milk per hour. It has two components; one is a vibrator and the other one shows the data on the screen. A slight amount of milk is taken from members as a sample individually and kept in a small circular cylindrical box made of plastic. This box is kept in the vibrator where a rotating small rod is dipped into the milk to shake. Now the shaken milk is taken to the second device and this device displays all information on its screen regarding the %age of fat,

water, SNF. This device is linked to a computer that gives a printed piece of advice about all information.

Fig 4.2 Procedure of milk procurement



Source: Primary data

4.3 Performance of selected dairy co-operatives in the Palakkad district

The first objective of the study is to analyze the performance of selected dairy co-operative societies. This evaluation will help to assess the performance level of each dairy co-operatives. The variables of this objective include the profile of selected dairy co-operatives, farmer member participation, financial indicators, structural factors, managerial factors, legal, political and technological factors. The assessments of these variables will provide an outline of the performance of dairy co-operative societies. The following section deals with the performance analysis of selected dairy co-operatives.

4.3.1 Profile of selected dairy co-operatives

The study was restricted to four dairy co-operatives with the highest milk procurement level in the Palakkad district, viz.

1. Moolathara Ksheerolpadaka Sahakarana Sangam Ltd. No. P 65 (D)
2. Kunnamkattupathy Ksheerolpadaka Sahakarana Sangam Ltd. No. P 126 (D)
3. Menonpara Ksheerolpadaka Sahakarana Sangam Ltd. No. P 281 (D)
4. Attappadi Ksheerolpadaka Sahakarana Sangam Ltd. No. P 558 (D)

Table 4.3 Profile of selected dairy co-operative societies

Sl. No.	Particulars	Moolathara DCS	Kunnamkattupathy DCS	Menonpara DCS	Attappadi DCS
1	Date of Registration	2nd January 1982	31st May 1993	3rd June 1985	3rd July 1987
2	Date of starting	14th March 1982	8th December 1993	8th November 1985	8th December 1987
3	Taluk	Chittoor	Chittoor	Chittoor	Attappadi
4	Area of operation	9th, 10th ward of Perumatty panchayat	11th and 12th ward of Kozhinjampara panchayath	12th and 13th ward of Vadakarapathy panchayath	4th and 5th ward of Agali panchayath
5	Audit classification (2019-20)	A	A	A	A
6	Membership (2019-20)	492	297	281	472
7	Share Capital (2019-20)	Rs. 5010	Rs. 3020	Rs. 2890	Rs. 4780
8	Working Capital (2019-20)	Rs. 73.85 lakhs	Rs. 59.51 lakhs	Rs. 38.68 lakhs	Rs. 31.45 lakhs
9	Reserves (2019-20)	Rs. 15.23 lakhs	Rs. 14.13 lakhs	Rs. 10.22 lakhs	Rs. 8.92 lakhs

10	**Net Profit (2019-20)**	**Rs.101.54 lakhs**	**Rs. 94.23 lakhs**	**Rs. 68.12 lakhs**	**Rs. 59.45 lakhs**

Source: Compiled from Audit Reports of respective dairy co-operative societies

4.3.1.1 Membership in dairy co-operative societies

Any milk producer who is having the qualification stated below can be a member of the dairy co-operative society;

- He/ she should be 18 or above 18 years of age.
- He/ she should reside within the area of operation of the society.
- He/she shall pour 500 litres of milk per year or measure 180 days per year.
- He/ she should not be insolvent.
- He/ she should not be a convict of any criminal offense.
- He/ she should not be an employee of society.

Members are the owners of co-operatives society. There are four classes of membership in the society, which are categorized as A class, B class, C class, and D class members. A class share is issued to individual members who are residing in the area of operation. B class shares are subscribed by the state government, municipality, corporation, and Panchayath. C class members are co-operative institutions and other registered institutions. D class members include nominal members. An entrance fee of Rs.1 is charged from the members with a share value of Rs.10.

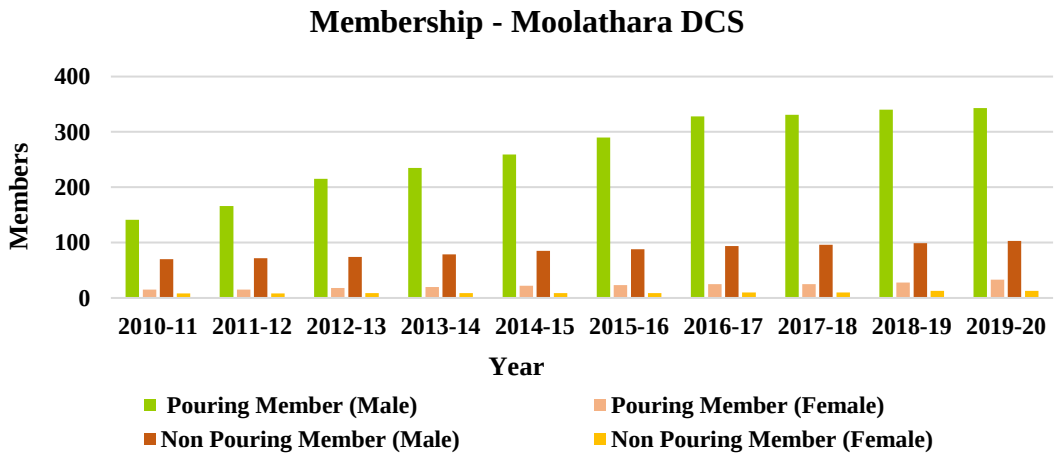
From 2010-11 to 2019-20, the membership of four dairy co-operative societies, namely Moolathara, Kunnamkattupathy, Menonpara, and Attappadi dairy co-operative societies were given below.

Table 4.4 Trends in membership of selected dairy co-operative societies from 2010-11 to 2019-20

Year	Moolathara DCS					Kunnamkattupathy DCS					Menonpara DCS					Attappadi DCS				
	Pouring Member		Non-pouring member		Total	Pouring Member		Non-pouring membe		Total	Pouring Member		Non-pouring member		Total	Pouring Member		Non-pouring member		Total
	M	F	M	F		M	F	M	F		M	F	M	F		M	F	M	F	
2010-11	141	15	70	8	234 (100)	145	4	83	6	238 (100)	114	13	61	10	198 (100)	243	22	99	8	373 (100)
2011-12	166	15	72	8	261 (111.5)	148	6	83	6	243 (102.1)	117	16	61	10	203 (102.5)	249	22	101	9	381 (102.1)
2012-13	215	18	74	9	316 (135.1)	154	8	83	6	251 (105.5)	122	15	63	10	210 (106.1)	257	22	104	10	393 (105.4)
2013-14	235	20	79	9	343 (146.6)	159	8	83	7	257 (107.9)	124	16	67	10	217 (109.6)	266	24	107	10	407 (109.1)
2014-15	259	22	85	9	375 (160.3)	166	8	83	7	264 (110.9)	128	16	69	10	223 (112.6)	270	26	109	13	418 (112.1)
2015-16	290	23	88	9	410 (175.2)	170	10	85	7	272 (114.3)	132	18	69	11	230 (116.2)	275	28	113	13	429 (115.1)
2016-17	328	25	94	10	457 (195.3)	175	11	85	7	278 (116.8)	138	22	71	13	244 (123.2)	280	31	113	13	437 (117.2)
2017-18	331	25	96	10	462 (197.4)	179	11	87	7	284 (119.3)	146	25	73	15	259 (130.8)	284	31	115	13	443 (118.8)
2018-19	340	28	99	13	480 (205.1)	181	14	88	8	291 (122.3)	149	28	73	15	265 (133.8)	289	36	119	14	458 (122.8)
2019-20	343	33	103	13	492 (210.3)	185	15	89	8	297 (124.8)	158	31	75	17	281 (141.9)	299	38	119	16	472 (126.5)
CAGR					**7.7**					**2.2**					**3.5**					**2.4**

Note: Figures in parenthesis show the growth index
Source: Compiled from the Audit reports of respective dairy co-operative societies from 2010-11 to 2019-20.

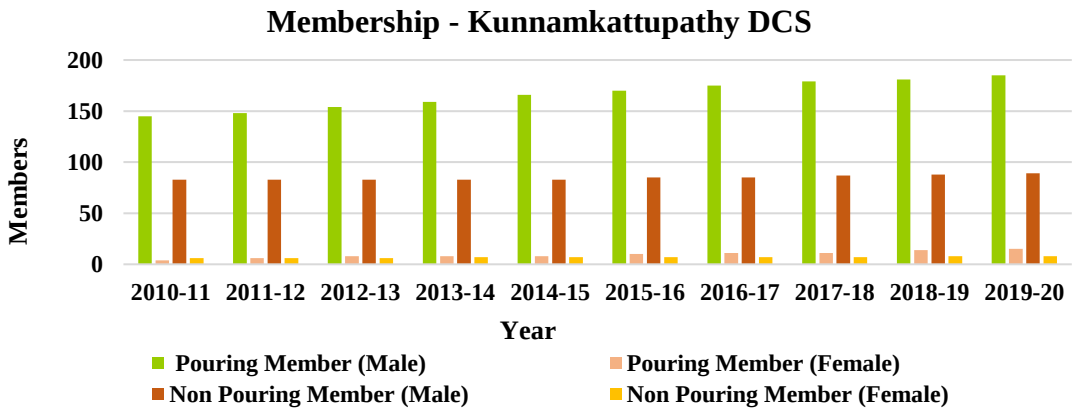
Fig. 4.3 Trends in membership of Moolathara dairy co-operative society from 2010-11 to 2019-20



Source: Compiled from the Audit reports of Moolathara dairy co-operative society from 2010-11 to 2019-20.

The table 4.4 and figure 4.3 depict the trends in the membership position of Moolathara dairy co-operative society from 2010-11 to 2019-20. The total membership of the society has increased to 492 in the year 2019-20 from 234 in 2010-11 with a CAGR of 7.7. Out of 492 members, 376 were pouring members and 116 were non-pouring members. It is clear from the figure that the female membership within the pouring and non-pouring categories show a dismal picture compared to male members.

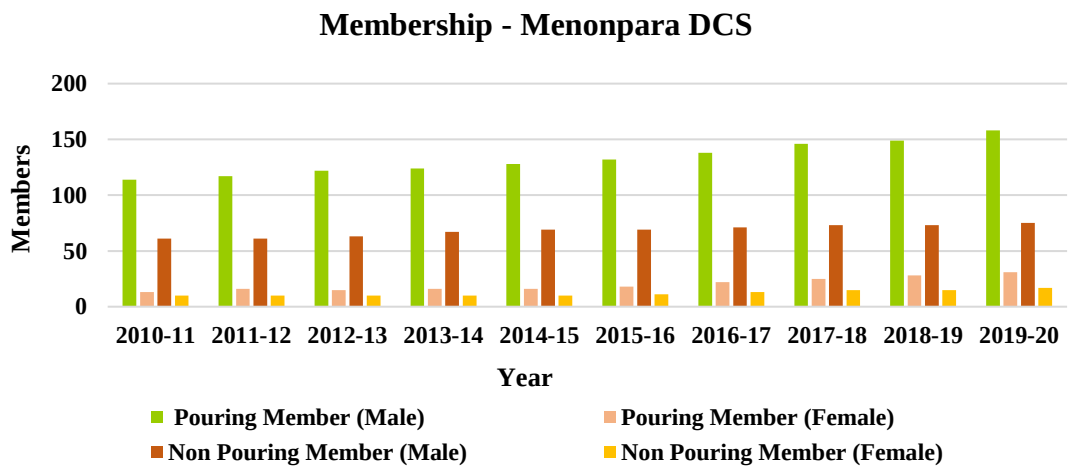
Fig. 4.4 Trends in membership of Kunnamkattupathy dairy co-operative society from 2010-11 to 2019-20



Source: Compiled from the Audit reports of Kunnamkattupathy dairy Co-operative society from 2010-11 to 2019-20.

The table 4.4 and figure 4.4 show the membership trend in the Kunnamkattupathy dairy co-operative society from 2010-11 to 2019-20. The overall membership of the society has increased to 297 in 2019-20, from 238 in 2010-11 with the lowest CAGR of 2.2. The figure clearly shows the current status of pouring and non-pouring members in Kunnamkattupathy dairy co-operative society. Currently, the society had 200 pouring members and 97 non-pouring members. The female membership in the pouring and non-pouring categories was less. It indicates the less participation level of females in this dairy co-operative society. Among male members, pouring members have exceeded the non-pouring members. So, the male members of the Kunnamkattupathy dairy co-operative society had supplied more milk than female members.

Fig. 4.5 Trends in membership of Menonpara dairy co-operative society from 2010-11 to 2019-20

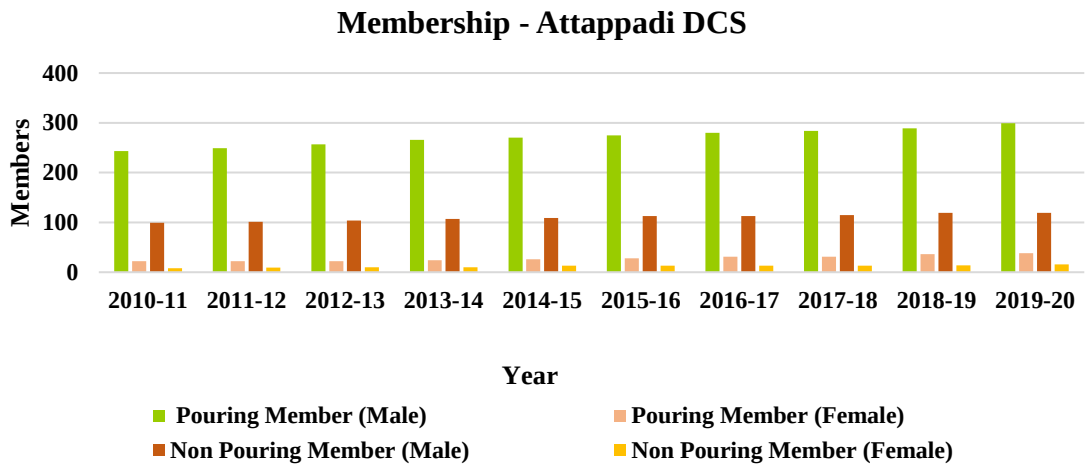


Source: Compiled from the Audit reports of Menonpara dairy co-operative society from 2010-11 to 2019-20.

The table 4.4 and figure 4.5 illustrates the membership trends in the Menonpara dairy co-operative society from 2010-11 to 2019-20. The society's overall membership has increased to 281 in 2019-20, from 198 in 2010-11 with a CAGR of 3.5. The graph clearly describes the present situation of pouring and non-pouring members of the Menonpara dairy co-operative society. The society had 189 pouring members and 92 non-pouring members. The female members of the society in the pouring and the non-pouring group were in poor condition. It reflects the low degree of female engagement in this dairy co-operative society. The pouring members have exceeded the non-pouring

members in the male category. This reflects the active participation of male members in the Menonpara dairy co-operative society.

Fig. 4.6 Trends in membership of Attappadi dairy co-operative society from 2010-11 to 2019-20



Source: Compiled from the Audit reports of Attappadi dairy co-operative society from 2010-11 to 2019-20.

Table 4.4 and figure 4.6 display the membership status of the Attappadi dairy co-operative society from 2010-11 to 2019-20. The number of members of the society has increased to 472 in 2019-20 from 373 in 2010-11with a CAGR of 2.4. Out of 472 members, 337 were pouring members and 135 were non-pouring members. The graph clearly illustrates the less involvement of females in the pouring and non-pouring category compared to males in Attappadi dairy co-operative society. The membership trend expresses the active engagement of male members in the Attappadi dairy co-operative society.

4.3.1.2 Milk procurement of selected dairy co-operative societies

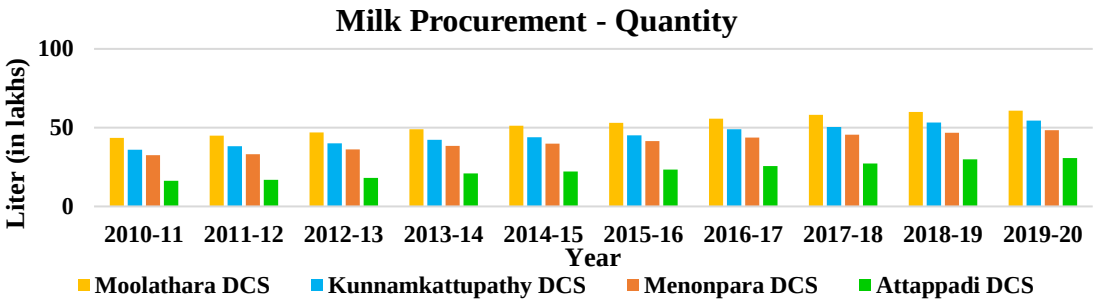
The society procures milk from 5 am to 7.30 am and from 5 pm to 7.30 pm. All members bring milk directly to the societies. There were no milk collection centers for societies. The amount paid for the procured milk will vary according to the tested quality of milk. The price of milk procurement was decided based on the price chart published by the Kerala Co-operative Milk Marketing Federation Ltd. (KCMMF).

Table 4.5 Trends in milk procurement of selected dairy co-operative societies from 2010-11 to 2019-20

Year	Moolathara DCS			Kunnamkattupathy DCS			Menonpara DCS			Attappadi DCS		
	Qty (in lakh litres)	Average Price/ litre (Rs.)	Amt (Rs. in lakhs)	Qty (in lakh litres)	Average Price/ litre (Rs.)	Amt (Rs. in lakhs)	Qty (in lakh litres)	Average Price/ litre (Rs.)	Amt (Rs. in lakhs)	Qty ((in lakh litres)	Average Price/ litre	Amt ((Rs. in lakhs)
2010-11	43.44 (100)	24.84 (100)	1079.05 (100)	36.06 (100)	23.54 (100)	848.85 (100)	32.55 (100)	24.32 (100)	791.62 (100)	16.19 (100)	23.15 (100)	374.79 (100)
2011-12	44.89 (103)	27.76 (112)	1246.15 (115)	38.31 (106)	26.72 (114)	1023.64 (121)	33.21 (102)	26.84 (110)	891.36 (113)	16.85 (104)	27.36 (118)	461.02 (123)
2012-13	46.99 (108)	28.82 (116)	1354.25 (126)	40.11 (111)	27.35 (116)	1097.01 (129)	36.20 (111)	28.14 (116)	1018.67 (129)	18.03 (111)	28.41 (123)	512.23 (137)
2013-14	49.00 (113)	28.88 (116)	1415.12 (131)	42.39 (118)	27.54 (117)	1167.42 (138)	38.40 (118)	29.54 (121)	1134.34 (143)	20.90 (129)	28.66 (124)	598.99 (160)
2014-15	51.14 (118)	31.33 (126)	1602.22 (148)	43.86 (122)	32.21 (137)	1412.73 (166)	39.78 (122)	30.24 (124)	1202.95 (152)	22.26 (137)	30.31 (131)	674.71 (180)
2015-16	52.99 (122)	31.37 (126)	1662.30 (154)	45.17 (125)	33.21 (141)	1500.10 (177)	41.51 (128)	32.41 (133)	1345.34 (170)	23.46 (145)	31.02 (134)	727.73 (194)
2016-17	55.70 (128)	31.85 (128)	1774.05 (164)	48.91 (136)	33.41 (142)	1634.08 (193)	43.67 (134)	33.25 (137)	1452.03 (183)	25.67 (159)	32.18 (139)	826.06 (220)
2017-18	58.12 (134)	34.65 (139)	2013.86 (187)	50.51 (140)	34.36 (146)	1735.52 (204)	45.61 (140)	35.21 (145)	1605.93 (203)	27.28 (168)	35.56 (154)	970.08 (259)
2018-19	60.05 (138)	35.61 (143)	2138.38 (198)	53.24 (148)	35.84 (152)	1908.12 (225)	46.81 (144)	35.28 (145)	1651.46 (209)	29.94 (185)	35.73 (154)	1069.76 (285)
2019-20	60.73 (140)	37.24 (150)	2261.59 (210)	54.58 (151)	36.36 (154)	1984.53 (234)	48.35 (149)	35.31 (145)	1707.24 (216)	30.78 (190)	36.56 (158)	1125.32 (300)
CAGR	**3.4**	**4.1**	**7.7**	**4.2**	**4.4**	**8.8**	**4.1**	**3.7**	**8**	**6.6**	**4.7**	**11.6**

Note: Figures in parenthesis show the growth index
Source: Compiled from the Annual reports of respective dairy co-operative societies from 2010-11 to 2019-20.

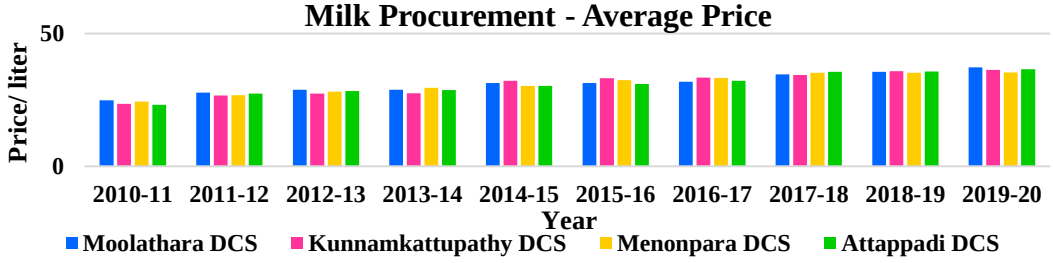
Fig.4.7 Trends in the quantity of milk procurement in selected dairy co-operative societies



Source: Compiled from the Annual reports of respective dairy co-operative societies from 2010-11 to 2019-20.

Table 4.5 and fig. 4.7 shows the increasing trends in milk procurement of the selected societies during 2010-11 to 2019-20. During the year 2019-20, the milk procurement was more in Moolathara dairy co-operative society (60.73 lakh litre) and less in Attappadi dairy co-operative society (30.78 lakh litre). Because the highest milk pouring members were more in Moolathara dairy co-operative society and less in Attappadi dairy co-operative society. The CAGR was highest in Attappadi dairy co-operative society (6.6) and lowest in Moolathara dairy co-operative society (3.4). The CAGR of Kunnamkattupathy and Menonpara dairy co-operative society was 4.2 and 4.1 respectively. It indicates the significant growth in milk procurement in Attappadi dairy co-operative society compared to other societies.

Fig.4.8 Trends in the average price of milk procurement in selected dairy co-operative societies

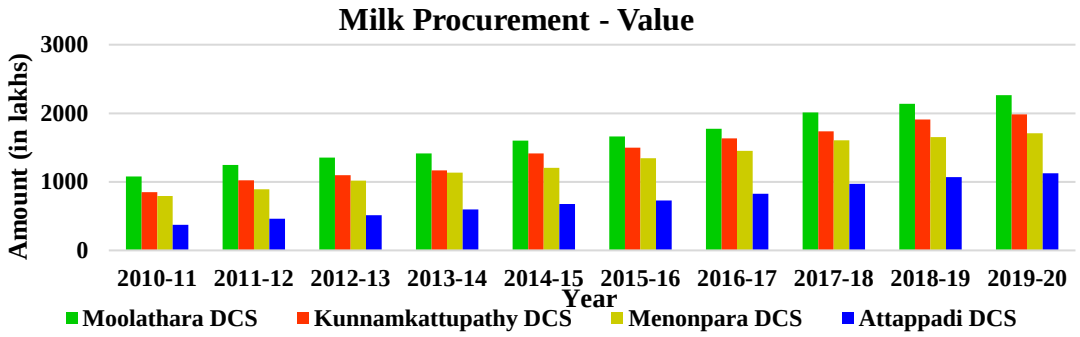


Source: Compiled from the Annual reports of respective dairy co-operative societies from 2010-11 to 2019-20.

Table 4.5 and fig.4.8 indicate the average milk procurement price per litre of four selected dairy co-operatives from 2010-11 to 2019-20. The price was fixed by KCMMF.

The realization is based on the tested quality of milk. Out of these societies, the CAGR was more in Attappadi dairy co-operative society (4.7) and less in Menonpara dairy co-operative society (3.7). The CAGR of Moolathara and Kunnamkattupathy dairy co-operative society was 4.1 and 4.4 respectively. It could be inferred that the average price per litre for milk procurement of each society shows an increasing trend throughout the study period.

Fig.4.9 Trends in the value of milk procurement in selected dairy co-operative societies



Source: Compiled from the Annual reports of respective dairy co-operative societies from 2010-11 to 2019-20.

Table 4.5 and fig.4.9 showed an increasing trend in the value of milk procurement for each society from the year 2010-11 to 2019-20. This value was calculated based on the price and quantity of procured milk by the societies. In the year 2019-20, the highest milk procurement value was achieved by Moolathara dairy co-operative society (Rs. 2261.59 lakh) and lowest by Attappadi dairy co-operative society (Rs. 1125.32 lakh). The CAGR was more in Attappadi dairy co-operative society (11.6) and less in Moolathara dairy co-operative society (7.7). The CAGR of Kunnamkattupathy and Menonpara dairy co-operative society was 8.8 and 8 respectively. This shows the significant growth rate in quantity and quality of procured milk in Attappadi dairy co-operative society compared to others.

4.3.1.3 Marketing of Milk by selected dairy co-operative societies

Following are the details related to the marketing of milk by Moolathara, Kunnamkattupathy, Menonpara, and Attappadi dairy co-operative societies

a) Local sales of selected dairy co-operative societies

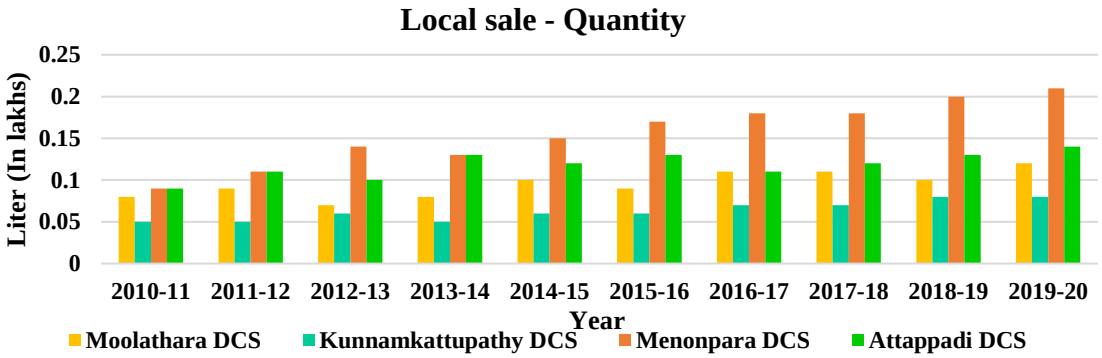
Local sales were targeted to the households and tea shops located near the selected dairy co-operative societies. The local sales of milk were less among these dairy co-operatives due to a large number of local milk producers.

Table 4.6 Trends in local sales of selected dairy co-operative societies from 2010-11 to 2019-20

Year	Moolathara DCS			Kunnamkattupathy DCS			Menonpara DCS			Attappadi DCS		
	Qty (in lakh litres)	Average Price/ litre (Rs.)	Amt (Rs. in lakhs)	Qty (in lakh litres)	Average Price/ litre (Rs.)	Amt (Rs. in lakhs)	Qty (in lakh litres)	Average Price/ litre (Rs.)	Amt (Rs. in lakhs)	Qty (in lakh litres)	Average Price/ litre (Rs.)	Amt (Rs. in lakhs)
2010-11	0.08 (100)	28 (100)	2.24 (100)	0.05 (100)	28 (100)	1.4 (100)	0.09 (100)	28 (100)	2.52 (100)	0.09 (100)	28 (100)	2.52 (100)
2011-12	0.09 (113)	28 (100)	2.52 (113)	0.05 (100)	28 (100)	1.4 (100)	0.11 (122)	28 (100)	3.08 (122)	0.11 (122)	28 (100)	3.08 (122)
2012-13	0.07 (88)	33 (118)	2.31 (103)	0.06 (120)	33 (118)	1.98 (141)	0.14 (156)	33 (118)	4.62 (183)	0.1 (111)	33 (118)	3.3 (131)
2013-14	0.08 (100)	33 (118)	2.64 (118)	0.05 (100)	33 (118)	1.65 (118)	0.13 (144)	33 (118)	4.29 (170)	0.13 (144)	33 (118)	4.29 (170)
2014-15	0.1 (125)	36 (129)	3.6 (161)	0.06 (120)	36 (129)	2.16 (154)	0.15 (167)	36 (129)	5.4 (214)	0.12 (133)	36 (129)	4.32 (171)
2015-16	0.09 (113)	36 (129)	3.24 (145)	0.06 (120)	36 (129)	2.16 (154)	0.17 (189)	36 (129)	6.12 (243)	0.13 (144)	36 (129)	4.68 (186)
2016-17	0.11 (138)	36 (129)	3.96 (177)	0.07 (140)	36 (129)	2.52 (180)	0.18 (200)	36 (129)	6.48 (257)	0.11 (122)	36 (129)	3.96 (157)
2017-18	0.11 (138)	40 (143)	4.4 (196)	0.07 (140)	40 (143)	2.8 (200)	0.18 (200)	40 (143)	7.2 (286)	0.12 (133)	40 (143)	4.8 (190)
2018-19	0.1 (125)	40 (143)	4 (179)	0.08 (160)	40 (143)	3.2 (229)	0.2 (222)	40 (143)	8 (317)	0.13 (144)	40 (143)	5.2 (206)
2019-20	0.12 (150)	44 (157)	5.28 (236)	0.08 (160)	44 (157)	3.52 (251)	0.21 (233)	44 (157)	9.24 (367)	0.14 (156)	44 (157)	6.16 (244)
CAGR	**4.1**	**4.6**	**8.9**	**4.8**	**4.6**	**9.6**	**8.8**	**4.9**	**13.9**	**4.5**	**4.9**	**9.3**

Note: Figures in parenthesis show the growth index
Source: Compiled from the Annual reports of respective dairy co-operative societies from 2010-11 to 2019-20.

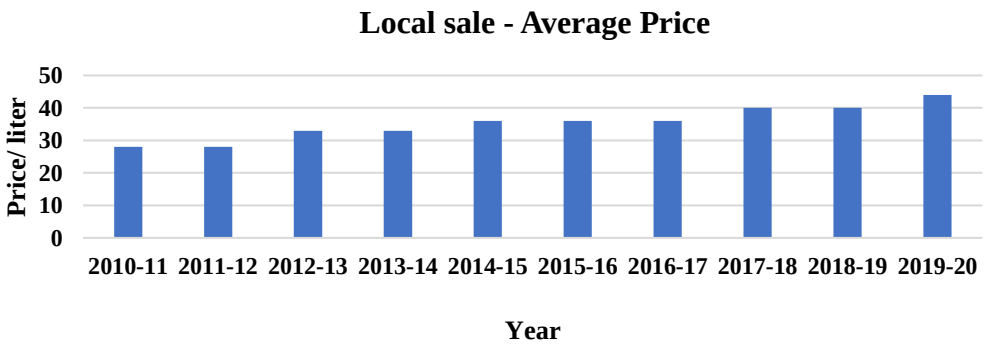
Fig.4.10 Trends in local milk sale quantity of selected dairy co-operative societies from 2010-11 to 2019-20



Source: Compiled from the Annual reports of respective dairy co-operative societies from 2010-11 to 2019-20.

Tabe 4.6 and fig. 4.10 displays the details regarding the local milk sale quantity of selected dairy co-operative societies. In the year 2019-20, Menonpara dairy co-operative society has the highest (0.21 lakh litre) and Kunnamkattupathy dairy co-operative society has the least quantity of local milk sale (0.08 lakh litre). The CAGR was more in Menonpara dairy co-operative society (8.8) and less in Moolathara dairy co-operative society (4.1). And the CAGR of Kunnamkattupathy and Attappadi dairy co-operative society was 4.8 and 4.5 respectively. The growth index of local sale quantity showed a fluctuating trend in all the societies due to variance in the demand for milk by the local consumers. In general, the demand for local milk sales was less in each society due to a large number of local milk producers.

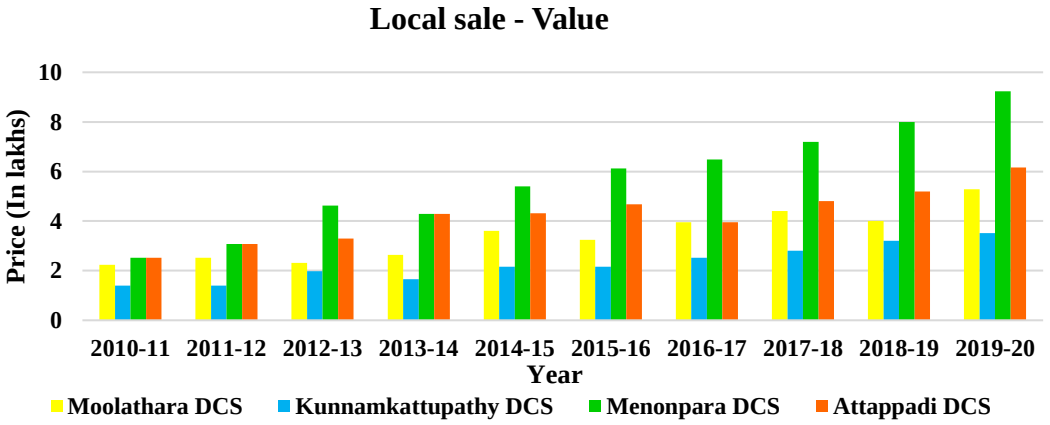
Fig.4.11 Trends in the average price of local milk sale of selected dairy co-operative societies from 2010-11 to 2019-20



Source: Compiled from the Annual reports of respective dairy co-operative societies from 2010-11 to 2019-20.

Table 4.6 and fig 4.11 shows the trends in the average price of local milk sale of selected dairy co-operative societies from 2010-11 to 2019-20. The price for local milk sales was the same for each society. Because it was decided based on the market price of Milma. The price of local milk sales was displayed an increasing trend with a CAGR of 4.6 in all societies.

Fig.4.12 Trends in the value of local milk sale of selected dairy co-operative societies from 2010-11 to 2019-20



Source: Compiled from the Annual reports of respective dairy co-operative societies from 2010-11 to 2019-20.

Tabe 4.6 and fig fig.4.12 represents the value earned by the sleeted dairy co-operative societies through local milk sale from 2010-11 to 2019-20. The value was calculated based on the price and quantity of locally sold milk by the societies. According to 2019-20, the highest amount through local milk sale was achieved by Menonpara dairy co-operative society (Rs. 9.24 lakh) and the lowest amount by Kunnamkattupathy dairy co-operative society (Rs. 3.52 lakh). The CAGR was less in Moolathara dairy co-operative society (8.9) compared to other societies. The CAGR of Attappadi and Menonpara dairy co-operative society was 9.3 and 13.9 respectively. The CAGR trend shows the highest annual growth rate in price and quantity of locally sold milk in Menonpara dairy co-operative society.

b) Sales to the MRCMPU by selected dairy co-operative societies

The procured milk after the local sales were directly supplied to the dairy plants of MRCMPU in Palakkad district namely Milma Palakkad dairy and Milk chilling plant Attappadi.

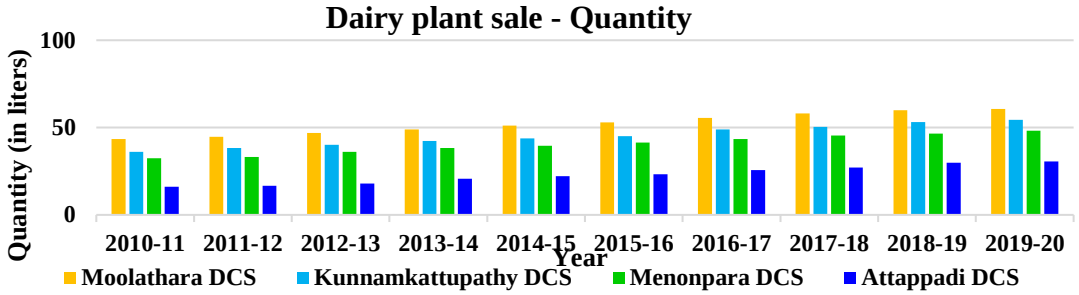
Table 4.7 Trends in sales to MRCMPU by selected dairy co-operative societies from 2010-11 to 2019-20

Year	Moolathara DCS			Kunnamkattupathy DCS			Menonpara DCS			Attappadi DCS		
	Qty (in lakh litres)	Average Price/ litre (Rs.)	Amt (Rs. in lakhs)	Qty (in lakh litres)	Average Price/ litre (Rs.)	Amt (Rs. in lakhs)	Qty (in lakh litres)	Average Price/ litre (Rs.)	Amt (Rs. in lakhs)	Qty (in lakh litres)	Average Price/ Litre (Rs.)	Amt (Rs. in lakhs)
2010-11	43.36 (100)	25.64 (100)	1111.75 (100)	36.01 (100)	24.15 (100)	869.64 (100)	32.46 (100)	25.34 (100)	822.54 (100)	16.1 (100)	24.76 (100)	398.64 (100)
2011-12	44.8 (103)	28.36 (110)	1270.53 (114)	38.26 (106)	27.49 (114)	1051.77 (121)	33.1 (102)	28.12 (111)	930.77 (113)	16.74 (104)	28.41 (115)	475.58 (119)
2012-13	46.92 (108)	29.11 (114)	1365.84 (123)	40.05 (111)	28.94 (120)	1159.05 (133)	36.06 (111)	29.65 (117)	1069.18 (130)	17.93 (111)	29.11 (118)	521.94 (131)
2013-14	48.92 (113)	29.69 (116)	1452.43 (131)	42.34 (118)	29.11 (121)	1232.52 (142)	38.27 (118)	31.24 (123)	1195.55 (145)	20.77 (129)	31.63 (128)	656.96 (165)
2014-15	51.04 (118)	32.28 (126)	1647.57 (148)	43.8 (122)	33.36 (138)	1461.17 (168)	39.63 (122)	31.75 (125)	1258.25 (153)	22.14 (138)	31.84 (129)	704.94 (177)
2015-16	52.9 (122)	32.74 (128)	1731.95 (156)	45.11 (125)	31.54 (131)	1422.77 (164)	41.34 (127)	33.64 (133)	1390.68 (169)	23.33 (145)	31.28 (126)	729.76 (183)
2016-17	55.59 (128)	32.94 (128)	1831.13 (165)	48.84 (136)	32.11 (133)	1568.25 (180)	43.49 (134)	32.54 (128)	1415.16 (172)	25.56 (159)	34.46 (139)	880.8 (221)
2017-18	58.01 (134)	35.84 (140)	2079.08 (187)	50.44 (140)	35.28 (146)	1779.52 (205)	45.43 (140)	36.66 (145)	1665.46 (202)	27.16 (169)	36.11 (146)	980.75 (246)
2018-19	59.95 (138)	36.94 (144)	2214.55 (199)	53.16 (148)	36.39 (151)	1934.49 (222)	46.61 (144)	37.21 (147)	1734.36 (211)	29.81 (185)	35.01 (141)	1043.6 (262)
2019-20	60.61 (140)	38.04 (148)	2305.6 (207)	54.5 (151)	37.49 (155)	2043.21 (235)	48.14 (148)	39.39 (155)	1896.23 (231)	30.64 (190)	36.39 (147)	1114.9 (280)
CAGR	**3.4**	**3.9**	**7.5**	**4.2**	**4.5**	**8.9**	**3.9**	**4.5**	**8.7**	**6.7**	**3.9**	**10.8**

Note: Figures in parenthesis show the growth index

Source: Compiled from the Annual reports of respective dairy co-operative societies from 2010-11 to 2019-20.

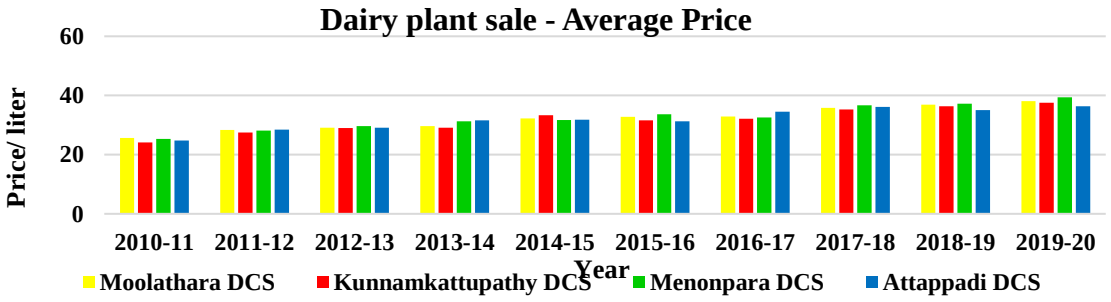
Fig. 4.13 Trends in quantity of sales to the MRCMPU by selected dairy co-operative societies from 2010-11 to 2019-20



Source: Compiled from the Annual reports of respective dairy co-operative societies from 2010-11 to 2019-20.

Table 4.7 and fig. 4.13 depicts the trends in the quantity of dairy plant sales in the selected dairy co-operative societies. The quantity of milk after the local sale was supplied to the dairy plants of KCMMF. The Moolathara, Kunnamkattupathy, and Menonpara dairy co-operative societies were supplied milk to the Palakkad Milma dairy plant. And Attappadi dairy co-operative society was supplied to the Attappadi Milma dairy plant. The quantity of dairy plant sales was more in Moolathara dairy co-operative society (60.61 lakh litre) with less CAGR of 3.4. Because society has the highest quantity of milk procurement and less quantity of local milk sales. The Attappadi dairy co-operative society has the least quantity of dairy plant sales (30.64 lakh litre) with the highest CAGR of 6.7.

Fig.4.14 Trends in the average price of sales to the MRCMPU by selected dairy co-operative societies from 2010-11 to 2019-20

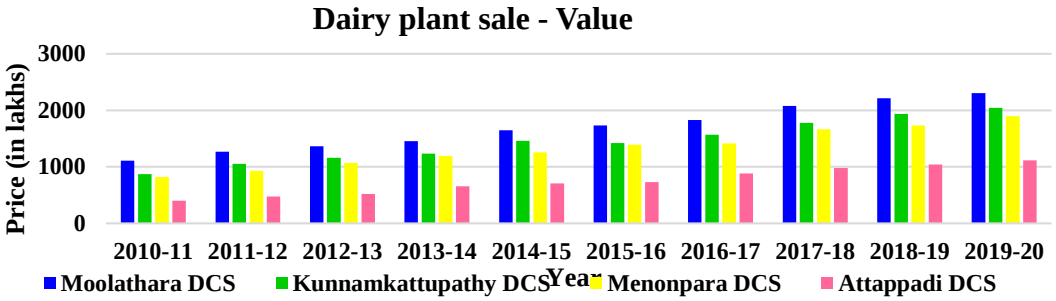


Source: Compiled from the Annual reports of respective dairy co-operative societies from 2010-11 to 2019-20.

Table 4.7 and fig.4.14 illustrates the average price of regional sales in selected dairy co-operative societies from 2010-11 to 2019-20. The price was decided based on

the price chart issued by KCMMF. So, the price of milk will be different for each society according to the quantity and quality of milk. Out of these societies, the CAGR was more in Kunnamkattupathy and Menonpara dairy co-operative society (4.5) and less in Moolathara and Attappadi dairy co-operative society (3.9). It could be inferred that the average price for milk procurement of each society shows an increasing trend during the study period.

Fig.4.15 Trends in the value of sales to the MRCMPU by selected dairy co-operative societies from 2010-11 to 2019-20



Source: Compiled from the Annual reports of respective dairy co-operative societies from 2010-11 to 2019-20.

Table 4.7 and fig. 4.15 represents the value earned by the sleeted dairy co-operative societies through dairy plant sales from 2010-11 to 2019-20. The value was calculated based on the price and quantity of dairy plant milk sold by the societies. According to 2019-20, the highest amount through dairy plant was achieved by Moolathara dairy co-operative society (Rs. 2305.6 lakh) with less CAGR of 7.5 and the lowest amount by Attappadi dairy co-operative society (Rs. 1114.9 lakh) with highest CAGR of 10.8. The CAGR of Kunnamkattupathy and Menonpara dairy co-operative society was 8.9 and 8.7 respectively. The CAGR trend shows the highest annual growth rate in price and quantity of dairy plant sale of milk in Attappadi dairy co-operative society**.**

4.3.2 Farmer member participation

Member participation shows the participation level of members among the functions of an organization. Dairy farmers are members of dairy co-operatives. The participation of dairy farmers in the functioning of dairy co-operative societies was analyzed in the following part.

Table 4.8 Farmer Member participation

Sl. No.	Statements	Score	Index	Opinion
1	Regular participation in the meetings	**1000**	**100**	**Very High**
2	Frequently contacting DCS for dairy related advice	**672**	**67.2**	**High**
3	Regularly participated in the election and voting process	**1000**	**100**	**Very High**
4	Regularly supplying milk to DCS	**985**	**98.5**	**Very High**
5	Actively participated in the social activities of the society	**912**	**91.2**	**Very High**
6	Rendering ideas and opinions for the social business.	**954**	**95.4**	**Very High**

Source: Primary data

The table 4.8 reveals the farmer member participation level using the index method. The respondents opined positively towards all the statements. Out of six statements, the interest of members in receiving advice related to dairying was comparatively less among the respondents. So, the final result states the active farmer member participation in the dairy co-operative societies.

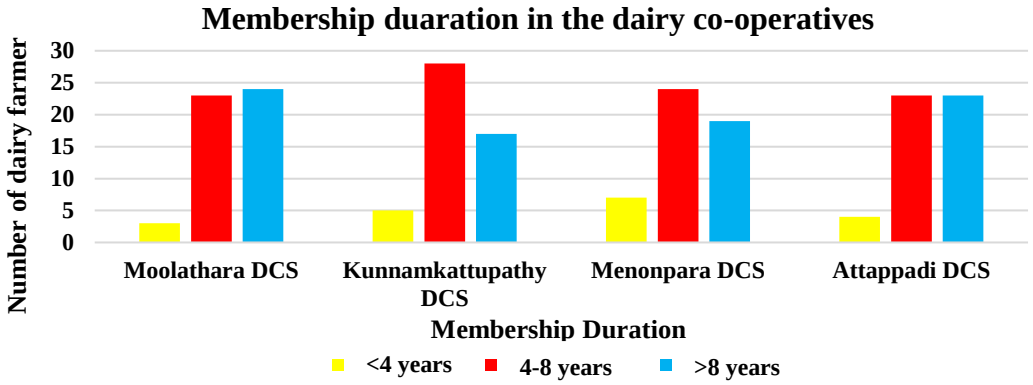
Table 4.9 Membership duration in the dairy co-operative societies

Period	Number of dairy farmers				Total
	Moolathara DCS	**Kunnamkattupathy DCS**	**Menonpara DCS**	**Attappadi DCS**	
<4 Years	3 (15.8) [6]	5 (26.3) [10]	7 (36.8) [14]	4 (21) [8]	**19 (100) [9.5]**
4 – 8 Years	23 (23.5) [46]	28 (28.6) [56]	24 (24.5) [48]	23 (23.5) [46]	**98 (100) [49]**
>8 Years	24 (28.9) [48]	17 (20.5) [34]	19 (22.9) [38]	23 (27.7) [46]	**83 (100) [41.5]**
Total	**50 [100]**	**50 [100]**	**50 [100]**	**50 [100]**	**200 [100]**

Note: Figures in parenthesis show the %age to total, '()' represents row total, and '[]' represents column total**.**

Source: Primary data

Fig. 4. 16 Membership duration in the dairy co-operative societies



Source: Primary data

Table 4.9 and figure 4.16 exhibit the duration of membership in dairy co-operatives. 98 farmers (49%) were having a membership duration between 4 to 8 years. And 83 farmers (41.5%) were having membership for more than 8 years. Only 19 farmers (9.5%) have membership with less than 4 years. Most of the dairy farmers of Moolathara dairy co-operative (23 farmers) were categorized in more than 8-year duration. The Kunnamkattupathy and Menonpara dairy co-operatives were having a maximum of members in 4 years to 8-year membership periods. The Attappadi dairy co-operative had equal farmer distribution in the 4 to 8-year category and greater than the 8-year category. So, most of the farmers were having a membership duration between 4 years to 8 years.

4.3.3 Financial indicators of the selected dairy co-operatives

The analysis provides a clear picture of the financial performance of Moolathara, Kunnamkattupathy, Menonpara, and Attappadi dairy co-operatives.

4.3.3.1 Share capital of selected dairy co-operative societies

The share capital denotes the amount of capital raised or to be raised by the issue of shares. It represents the initial contribution made by a member towards the resources of the society to get benefits from the society.

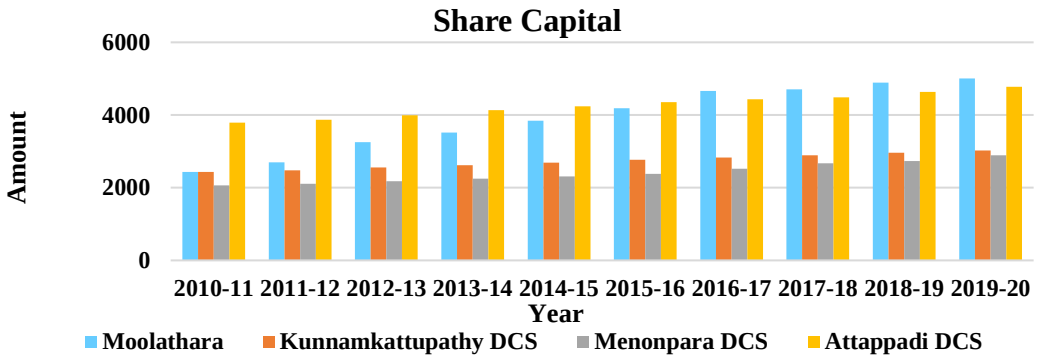
Table 4.10 Trends in share capital of selected dairy co-operative societies from 2010-11 to 2019-20 **(Amount in Rs.)**

Year	Moolathara DCS	Kunnamkattupathy DCS	Menonpara DCS	Attappadi DCS
2010-11	2430 (100)	2430 (100)	2060 (100)	3790 (100)
2011-12	2700 (111)	2480 (102)	2110 (102)	3870 (102)
2012-13	3250 (134)	2560 (105)	2180 (106)	3990 (105)
2013-14	3520 (145)	2620 (108)	2250 (109)	4130 (109)
2014-15	3840 (158)	2690 (111)	2310 (112)	4240 (112)
2015-16	4190 (172)	2770 (114)	2380 (116)	4350 (115)
2016-17	4660 (192)	2830 (116)	2520 (122)	4430 (117)
2017-18	4710 (194)	2890 (119)	2670 (130)	4490 (118)
2018-19	4890 (201)	2960 (122)	2730 (133)	4640 (122)
2019-20	5010 (206)	3020 (124)	2890 (140)	4780 (126)
CAGR	**7.5**	**2.2**	**3.4**	**2.3**

Note: Figures in parenthesis show the growth index

Source: Compiled from the Audit reports of respective dairy co-operative societies from 2010-11 to 2019-20.

Fig 4.17 Trends in the share capital of selected dairy co-operative societies from 2010-11 to 2019-20



Source: Compiled from the Audit reports of respective dairy co-operative societies from 2010-11 to 2019-20.

Table 4.10 and figure 4.17 depict the share capital details of selected dairy co-operatives from the year 2010-11 to 2019-20. All the dairy co-operatives showed an increasing trend of share capital over the years due to the rise in membership. The CAGR was higher for Moolathara dairy co-operative society (7.5) and lowest for Kunnamkattupathy dairy co-operative society (2.2). The CAGR of Menonpara dairy co-operative society was 3.4 and Attappadi dairy co-operative society was 2.3.

4.3.3.2 Working capital of selected dairy co-operative societies

Working capital is the amount that is required to operate an organization on a day-to-day basis. The working capital is a composition of share capital, reserves, deposits, and borrowings less investment in fixed assets.

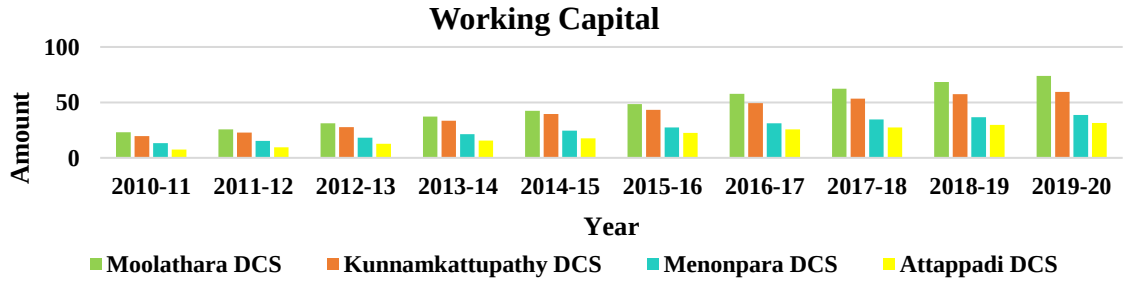
Table 4.11 Trends in working capital of selected dairy co-operative societies from 2010-11 to 2019-20 **(Rs. in lakhs)**

Year	Moolathara DCS	Kunnamkattupathy DCS	Menonpara DCS	Attappadi DCS
2010-11	23.11 (100)	19.54 (100)	13.26 (100)	7.45 (100)
2011-12	25.69 (111)	22.84 (117)	15.25 (115)	9.48 (127)
2012-13	31.04 (134)	27.84 (142)	18.24 (138)	12.59 (169)
2013-14	37.20 (161)	33.54 (172)	21.25 (160)	15.52 (208)
2014-15	42.30 (183)	39.52 (202)	24.51 (185)	17.56 (236)
2015-16	48.49 (210)	43.21 (221)	27.45 (207)	22.48 (302)
2016-17	57.62 (249)	49.48 (253)	31.25 (236)	25.61 (344)
2017-18	62.27 (269)	53.54 (274)	34.54 (260)	27.48 (369)
2018-19	68.38 (296)	57.46 (294)	36.54 (276)	29.65 (398)
2019-20	73.85 (320)	59.51 (305)	38.68 (292)	31.45 (422)
CAGR	**12.3**	**11.8**	**11.3**	**15.5**

Note: Figures in parenthesis show the growth index

Source: Compiled from the Audit reports of respective dairy co-operative societies from 2010-11 to 2019-20.

Fig. 4.18 Trends in working capital of selected dairy co-operative societies from 2010-11 to 2019-20



Source: Compiled from the Audit reports of respective dairy co-operative societies from 2010-11 to 2019-20.

Table 4.11 and chart 4.18 symbolize the increasing trend of working capital of selected four dairy co-operative societies from the year 2010-11 to 2019-20. The CAGR of working capital was more in Attappadi dairy co-operative society (15.5) and less in

Menonpara dairy co-operative society (11.3). The CAGR of Kunnamkattupathy and Moolathara dairy co-operative society were 11.8 and 12.3 respectively. The increasing trend of working capital revealed that each society has an adequate amount of funds to meet the day-to-day operations without any financial shortage.

4.3.3.3 Reserve of selected dairy co-operative societies

Reserve is a component of owned fund of the society to meet unexpected emergencies that might occur in the future. It is mandatory on the part of every society to allocate not less than 15 % of annual net profits to the reserve fund.

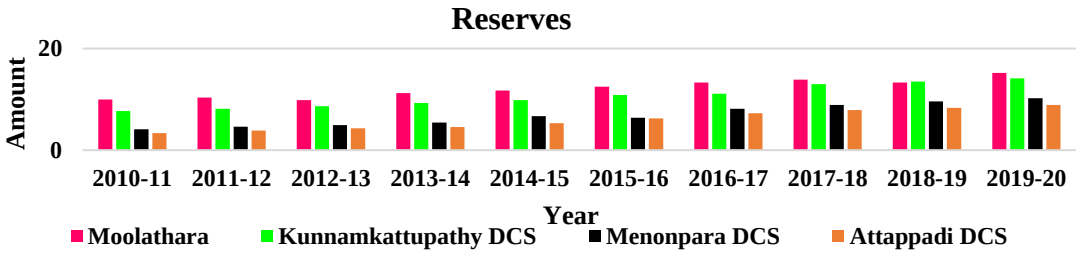
Table 4.12 Trends in reserve of selected dairy co-operative societies from 2010-11 to 2019-20 **(Rs. in lakhs)**

Year	Moolathara DCS	Kunnamkattupathy DCS	Menonpara DCS	Attappadi DCS
2010-11	9.99 (100)	7.68 (100)	4.12 (100)	3.38 (100)
2011-12	10.35 (104)	8.14 (106)	4.63 (112)	3.88 (115)
2012-13	9.83 (98)	8.62 (112)	4.90 (119)	4.31 (128)
2013-14	11.25 (113)	9.25 (120)	5.43 (132)	4.57 (135)
2014-15	11.73 (117)	9.82 (128)	6.70 (163)	5.32 (157)
2015-16	12.48 (125)	10.84 (141)	6.39 (155)	6.22 (184)
2016-17	13.32 (133)	11.08 (144)	8.13 (197)	7.29 (216)
2017-18	13.87 (139)	12.97 (169)	8.91 (216)	7.87 (233)
2018-19	13.32 (133)	13.53 (176)	9.58 (233)	8.32 (246)
2019-20	15.23 (152)	14.13 (184)	10.22 (248)	8.92 (264)
CAGR	**4.3**	**6.3**	**9.5**	**10.2**

Note: Figures in parenthesis show the growth index

Source: Compiled from the Audit reports of respective dairy co-operative societies from 2010-11 to 2019-20.

Fig.4.19 Trends in reserve of selected dairy co-operative societies from 2010-11 to 2019-20



Source: Compiled from the Audit reports of respective dairy co-operative societies from 2010-11 to 2019-20.

Table 4.12 and chart 4.19 represent the trends in reserves of selected dairy co-operatives for the period from 2010-11 to 2019-20. The CAGR of Attappadi dairy co-operative society (10.2) was higher and lesser in Moolathara dairy co-operative society (4.3). It means the annual reserve allocation during the study period was more in Attappadi dairy co-operative society and less in Moolathara dairy co-operative society. The CAGR of Kunnamkattupathy and Menonpara dairy co-operative society were 6.3 and 9.5 respectively. Each society has properly maintained the reserves each year according to their net profit.

4.3.3.4 Net profit of selected dairy co-operative societies

Net profit is the degree of profitability after accounting for all costs separately. If the total income is greater than the total expense, society earns a net profit. If the total income is less than the total expense, society incurs a net loss. Net profit or Loss designates the efficiency and viability of the society during a particular period.

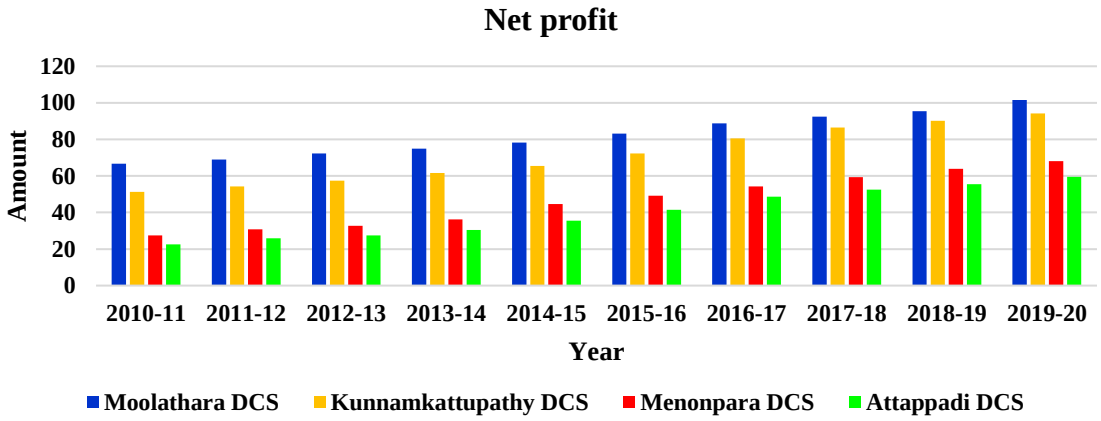
Table 4.13 Trends in net profit of selected dairy co-operative societies from 2010-11 to 2019-20 **(Rs. in lakhs)**

Year	Moolathara DCS	Kunnamkattupathy DCS	Menonpara DCS	Attappadi DCS
2010-11	66.61 (100)	51.23 (100)	27.45 (100)	22.54 (100)
2011-12	69.03 (104)	54.26 (106)	30.84 (112)	25.84 (115)
2012-13	72.22 (108)	57.46 (112)	32.64 (119)	27.54 (122)
2013-14	75.01 (113)	61.65 (120)	36.21 (132)	30.45 (135)
2014-15	78.21 (117)	65.45 (128)	44.65 (163)	35.47 (157)
2015-16	83.21 (125)	72.25 (141)	49.25 (179)	41.45 (184)
2016-17	88.78 (133)	80.54 (157)	54.21 (197)	48.62 (216)
2017-18	92.45 (139)	86.45 (169)	59.42 (216)	52.45 (233)
2018-19	95.49 (143)	90.23 (176)	63.84 (233)	55.47 (246)
2019-20	101.54 (152)	94.23 (184)	68.12 (248)	59.45 (264)
CAGR	**4.3**	**6.3**	**9.5**	**10.2**

Note: Figures in parenthesis show the growth index

Source: Compiled from the Audit reports of respective dairy co-operative societies from 2010-11 to 2019-20.

Fig.4.20 Trends in net profit of selected dairy co-operative societies from 2010-11 to 2019-20



Source: Compiled from the Audit reports of respective dairy co-operative societies from 2010-11 to 2019-20.

Table 4.13 and Fig 4.20 display the net profit of selected dairy co-operatives from the year 2010-11 to 2019-20. The highest CAGR of net profit is in Attappadi dairy co-operative society (10.2) and lowest in Moolathara dairy co-operative society (4.3). The amount of net profit was more in Moolathara dairy co-operative society. But the annual growth rate during the study period was less compared to other dairy co-operatives. The quantity of net profit was less and the annual growth rate was high in Attappadi dairy co-operative society. The CAGR of net profit in Kunnamkattupathy and Menonpara dairy co-operatives were 6.3 and 9.5 respectively. The trend of net profit showed positive growth in each dairy co-operative society. It indicates the progress of selected dairy co-operative societies throughout the study period.

4.3.4 Structural factors

The following table reveals the performance of structural factors of Moolathara, Kunnamkattupathy, Menonpara, and Attappadi dairy co-operative societies.

Table 4.14 Structural Factors

Sl. No	Statements	Score	Index	Opinion level
1	Unethical and poor management practices	**236**	**20**	**Very Low**
2	Lack of modern management techniques	**236**	**20**	**Very Low**

3	Administration of society is not based on a set of rules	**236**	**20**	**Very Low**
4	The predominance of the vested interest of a particular person or class	**236**	**20**	**Very Low**
5	Absence of regular performance appraisal of employees	**236**	**20**	**Very Low**

Source: Primary data

The table 4.14 describes the view of respondents related to the structural factors of selected dairy co-operative societies. The respondents include 200 active members and 36 directors. The opinion of respondents for all statements is very low. It indicates the proper management techniques adopted by the four selected dairy co-operatives.

4.3.5 Managerial factors

The following table evaluated the managerial factors of Moolathara, Kunnamkattupathy, Menonpara, and Attappadi dairy co-operative societies. The managerial factors include the general body, executive committee meetings, and audits. The opinions were collected from members as well as the Board of Directors.

Table 4.15 Managerial Factors

Sl. No	Statements	Score	Index	Opinion level
a) Related to the general body (N=200 active members+ 36 directors)				
1	GB meetings are not conducted regularly	**236**	**20**	**Very Low**
2	Failed to circulate GB notice in time	**236**	**20**	**Very Low**
3	Agenda for the GB meetings are not intimated in advance	**236**	**20**	**Very Low**
4	Documents/information for deliberations in GB meetings are not circulated in advance	**236**	**20**	**Very Low**
5	Occasional attendance in GB meetings	**236**	**20**	**Very Low**
6	Rare involvement in discussions in the GB meetings	**236**	**20**	**Very Low**
7	GB meetings usually resorted to making necessary decisions	**236**	**20**	**Very Low**
8	GB meetings were suspended due to insufficient quorum	**236**	**20**	**Very Low**

9	GB meetings were conducted even without quorum in exceptional cases	**236**	**20**	**Very Low**
10	Delay in implementing decisions of GB	**236**	**20**	**Very Low**
b) Related to the executive committee meeting (N= 36 directors)				
1	Executive committee meetings are not conducted regularly	**36**	**20**	**Very Low**
2	Notice of executive committee meetings are not received in time	**36**	**20**	**Very Low**
3	Agenda for the executive committee meetings not intimated in advance	**36**	**20**	**Very Low**
4	Documents/information for discussions in executive committee meetings not circulated in advance	**36**	**20**	**Very Low**
5	Executive committee meetings usually resorted to ad hoc decisions	**36**	**20**	**Very Low**
6	Executive committee meetings were suspended due to insufficient quorum	**36**	**20**	**Very Low**
7	Executive committee meetings were conducted even without quorum in exceptional cases	**36**	**20**	**Very Low**
8	Executive committee meetings were inconclusive of agenda of meetings	**36**	**20**	**Very Low**
9	Rarely involved in day-to-day managerial issues of the society	**36**	**20**	**Very Low**
10	Rarely monitor the implementation of decisions of the executive committee meeting	**36**	**20**	**Very Low**
c) Related to audit **(**N= 36 directors)				
1	Delay in conducting the annual audit	**36**	**20**	**Very Low**
2	Delay in the rectification of audit defects	**36**	**20**	**Very Low**
3	Down gradation of audit classification of the society	**36**	**20**	**Very Low**
4	The inquiry was ordered based on Audit reports/other reasons	**36**	**20**	**Very Low**

Source: Primary data

The table 4.15 reveals the managerial factors for assessing the performance of selected dairy co-operative societies. Administrative factors were studied with three dimensions, namely related to the general body, related to executive committee meetings, and related to the audit. The study reveals that the general body is held regularly with timely notification and full participation. It also reveals that the executive committee meetings are held regularly with adequate documents and information's circulated well in advance. Further, the audit of the selected dairy co-operative societies is carried out by department auditors in time, and rectification of audit defects is considered as prime activity by the selected dairy co-operative societies.

4.3.6 Legal factors

The following table reveals the legal environment in the selected dairy co-operative societies. This will help to analyze the involvement of legal factors in the performance of dairy co-operative societies. Data were collected from the members as well as directors with nine negative statements by using five-point Likert scale.

Table 4.16 Legal factors

Sl. No	Statements	Score	Index	Opinion level
1	Corruption in the dairy co-operative society.	**236**	**20**	**Very Low**
2	Election of office bearers not conducted at the annual general body as per rules	**236**	**20**	**Very Low**
3	Audited accounts and annual performance reports are not submitted to the annual general body	**236**	**20**	**Very Low**
4	Enrolment of members to the society not as per act and rules	**236**	**20**	**Very Low**
5	Annual budget and performance reports are not scrutinized in the GB	**236**	**20**	**Very Low**
6	Expenditure for the day-to-day functions not as per the approved budget	**236**	**20**	**Very Low**
7	Monthly accounts of receipts and payments are not approved at the monthly executive committee meeting	**236**	**20**	**Very Low**

8	Neglects tri-monthly& annual stock verification	**236**	**20**	**Very Low**
9	Annual fee collections are used for the day-to-day expenditure of the society	**236**	**20**	**Very Low**

Source: Primary data

The table 4.16 explains the findings of the involvement of legal factors in the dairy co-operative societies. The result stated that the societies are functioning according to the bylaw. The selected societies are properly maintained the financial records. The conduct of election, audit, enrolment of members was as per the rules. It indicates that the selected dairy co-operative societies properly followed the rules and regulations. It helped the societies for their performance growth.

4.3.7 Political factors

The following table reveals the political involvement in the selected dairy co-operative societies. This will help to analyze the level of influence of political factors among the dairy co-operative societies. Data were collected from the members as well as directors with five negative statements by using five-point Likert scale.

Table 4.17 Political factors

Sl. No	Statements	Score	Index	Opinion level
1	Over politicization in the dairy co-operative society.	**236**	**20**	**Very Low**
2	The predominance of the vested interest of a particular person's political view	**236**	**20**	**Very Low**
3	The election of executive committee members is influenced by the politics existing in the locality	**236**	**20**	**Very Low**
4	Heavy dependency on government capital rather than society's profit	**236**	**20**	**Very Low**
5	Marketing is influenced by the interests of political leaders in the locality.	**236**	**20**	**Very Low**

Source: Primary data

The table 4.17 reveals the view of respondents towards the political involvement among the selected dairy co-operative societies. The outcome states that there was no political interference in the performance of the dairy co-operative society. The societies

were operating only for the betterment of dairy farmers. All members were considered equally. The respondents opined that the political power has not prevailed in any of the selected dairy co-operative societies. So, it indicates the low political empowerment for dairy farmers through dairy co-operative societies.

4.3.8 Infrastructural and technological details of dairy co-operative societies

The following table explains the infrastructural and technological facilities that are handled by the four dairy co-operatives.

Table 4.18 Infrastructural and technological facilities of selected dairy co-operative societies as on July 2021

Sl. No.	Item	Moolathara DCS	Kunnamkattupathy DCS	Menonpara DCS	Attappadi DCS
1.	Land	20 Cent	20 Cent	25 Cent	15 Cent
2.	Building	6534 Sq. ft	6969.6 Sq. ft	7840 Sq. ft	4356 Sq. ft
3.	Computer	3	3	3	3
4.	Printer	2	2	2	2
5.	Dish and Vessels (BMC, Can- 50 litre)	BMC - 3 (20000 Litres) 250 Cans	BMC - 3 (15000 Litres) 100 Cans	BMC - 3 (15000 Litres) 75 Cans	BMC - 3 (15000 Litres) 50 Cans
7.	Testing Machines (Ekomilk Ultra Milk Analyzer)	3	2	2	2

Source: Primary data

Table 4.18 represents the infrastructural and technological facilities that prevail in the dairy co-operatives. Land, building, computer, printer, dish and vessels, testing machines were the basic facilities and equipment used by the societies. The dish and vessels include bulk milk cooler and milk cans which are used for milk storing and milk transportation purposes. The Ekomilk Ultra Milk Analyzer was used by the societies for milk testing. It could be inferred that the selected dairy co-operative societies had sufficient facilities for its proper functioning.

4.3.9 Functional factors

The following table measured the functional factors of four selected dairy co-operative societies. The functional factors include milk procurement and milk marketing. Data were collected from the members as well as directors and analyzed by using five-point Likert scale.

Table 4.19 Functional factors

Sl. No	Statements	Score	Index	Opinion level
a) Related to milk procurement				
1	There are no proper adulteration detection mechanisms.	**236**	**20**	**Very Low**
2	Procurement quantity gets reduced due to the lack of transportation facilities.	**236**	**20**	**Very Low**
3	The middleman is engaged between milk producers and society.	**236**	**20**	**Very Low**
4	Milk producers are not properly maintaining hygiene while bringing milk to society.	**236**	**20**	**Very Low**
5	The staff of the society is completing the records not on time and regular basis.	**236**	**20**	**Very Low**
6	Various activities and steps are not undertaken for the cleanliness of utensils, staff, equipment, and building emphasizing procurement of clean milk.	**236**	**20**	**Very Low**
7	Society not properly checks the quality of milk testing equipment and other accessories.	**236**	**20**	**Very Low**
8	The absence of trained Artificial Insemination (AI) and Veterinary First Aid (VFA) workers in the societies.	**236**	**100**	**Very High**
b) Related to milk marketing				
1	The society has not installed bulk cooler facilities for chilling the milk	**236**	**20**	**Very Low**
2	The milk price is not decided based on the price policies of the milk union.	**236**	**20**	**Very Low**

3	The managing committee is not authorized to fix the quantity and price of milk to be marketed locally.	**236**	**20**	**Very Low**
4	After conducting the quality test for all the samples, the remaining sample milk is not properly stored for sale.	**236**	**20**	**Very Low**
5	Society, at the end of the year, doesn't pay dividends accurately.	**236**	**20**	**Very Low**
6	Society facing difficulties in transportation milk to the consumers.	**236**	**20**	**Very Low**

Source: Primary data

The table 4.19 discloses the details about the assessment related to the functional factors of selected dairy co-operative societies. Milk procurement and milk marketing were the main functions of dairy co-operative societies. The dairy farmers have marked positive opinions towards the maintenance of proper records, dividend distribution, testing equipment, and hygiene during milk procurement. But the societies don't have trained Artificial Insemination (AI) and Veterinary First Aid (VFA) workers to guide the dairy farmers. So, dairy farmers have used the services of private clinics and government veterinary hospitals to solve the problems. But consulting a private veterinary doctor and availing of their services incur costs. So, it is better to appoint an AI and VFA worker in the societies. Each society has proper milk storage facilities like bulk milk coolers. The price for the procured milk was calculated based on the price chart of the KCMMF union. The local sale price of milk was decided with the opinions of the managing committee. None of the societies undertaken the sample sale of milk.

4.3.10 Human resource factors

The table 4.20 reveals the human resource factors of selected dairy co-operative societies. The respondents were the employees of four selected dairy co-operative societies. It will help to measure the working environment of the workers. Each society consisted of five workers.

Table 4.20 Human resource factors

Sl. No.	Statements	Score	Index	Opinion level
a) Related to organizational climate				
1	There is a lack of professional skills among the employees of the society.	**20**	**20**	**Very Low**
2	Staff scarcity and employee overburden are persisting in society.	**20**	**20**	**Very Low**
3	Most of the employees are over-aged employees.	**20**	**20**	**Very Low**
4	The lack of proper employee training programmes affects the work productivity of employees.	**20**	**20**	**Very Low**
5	The absence of good work culture & commitment affects the work yield of employees.	**20**	**20**	**Very Low**
6	There is no significant hike in the salary.	**20**	**20**	**Very Low**
7	Society is not conducting adequate performance appraisals for employees.	**20**	**20**	**Very Low**
8	There are poor interpersonal relations among the employees.	**20**	**20**	**Very Low**
9	The employees are working lazily.	**20**	**20**	**Very Low**
10	The stress level of staff is more in society.	**20**	**20**	**Very Low**
11	There is a lack of proper equipment and facilities for employees.	**20**	**20**	**Very Low**
12	Society is not conducting a proper periodical job performance review of employees.	**20**	**20**	**Very Low**
13	There is a lack of motivation for employees.	**20**	**20**	**Very Low**
14	The employees are facing difficulties due to extended working hours.	**20**	**20**	**Very Low**
15	Employee discrimination is prevailing in society.	**20**	**20**	**Very Low**
b) Related to job satisfaction level				
1	The management doesn’t encourage and recognizes new ideas.	**20**	**20**	**Very Low**

2	Employees are not satisfied with the opportunities for growth within the organization.	**20**	**20**	**Very Low**
3	Employees are not satisfied with their services.	**20**	**20**	**Very Low**
4	Employees are not satisfied with the services of the organization.	**20**	**20**	**Very Low**
5	The customers are not treated with respect by staff.	**20**	**20**	**Very Low**
6	The employees are lazy to complete a task.	**20**	**20**	**Very Low**
7	The employees are ignoring constructive suggestions or criticism.	**20**	**20**	**Very Low**
8	Employees are not satisfied with how the organization addresses external issues which impacting the services.	**20**	**20**	**Very Low**
9	Employees are not satisfied with how the organization addresses internal issues which impacting the services.	**20**	**20**	**Very Low**
10	The organizational lines of communication flow irregularly.	**20**	**20**	**Very Low**
11	The supervisor would not respond appropriately related to the problems of employees.	**20**	**20**	**Very Low**
12	Employees are not satisfied with the level and amount of compensation they receive.	**20**	**20**	**Very Low**
13	The supervisor didn't provide resources to improve the work of employees.	**20**	**20**	**Very Low**
14	The supervisor didn't encourage high achievement by reducing the fear of failure.	**20**	**20**	**Very Low**
15	Employees didn't receive fair and honest performance evaluations.	**20**	**20**	**Very Low**
16	Employees didn't believe that they receive the recognition for their contribution.	**20**	**20**	**Very Low**
17	Employees are not satisfied with the amount of training I receive to do my job.	**20**	**20**	**Very Low**

18	The work environment is not comfortable and inadequate to the needs of the program/department.	**20**	**20**	**Very Low**
19	The employees didn't utilize appropriate problem-solving skills.	**20**	**20**	**Very Low**
20	The salary is less to similar organizations providing similar services.	**20**	**20**	**Very Low**

Source: Primary data

The table 4.20 reveals the opinions associated with the human resource factors of selected dairy co-operative societies. The employees marked positive responses towards the organizational climate and job satisfaction levels in dairy co-operative societies. The organizational climate includes professional skill, commitment, salary hike, performance appraisal, interpersonal relations, organizational facilities, for the employees. And the job satisfaction level includes satisfaction related to services and facilities offered by the selected dairy co-operative societies and the behaviour of the Board of Directors and members towards the employees. The employees were positively responded to these factors. It indicates that the societies were providing special care to the employees for increasing the efficiency of the work.

4.3.11 Co-operative governance with respect to employees

The succeeding table 4.21 evaluated the co-operative governance of selected dairy co-operative societies. This segment deals with the views of the employees towards the performance of the Board of Directors of each society. It will help to measure the role of the Board of Directors in the functioning of dairy co-operative societies.

Table 4.21 Co-operative governance with respect to employees

Sl. No	Statements	Score	Index	Opinion level
1	The Board of Directors is not properly guiding employees.	**71**	**71**	**High**
2	The boards of directors didn't listen and respond to the views of employees.	**78**	**78**	**High**
3	Boards of directors don't have sufficient knowledge and experience to provide direction for employees.	**57**	**57**	**Moderately High**

4	The board members are not fair and honest in their dealings with members.	**20**	**20**	**Very Low**
5	The Board of Directors is not actively participating in all activities of the co-operative society.	**20**	**20**	**Very Low**
6	They are not maintaining good and healthy relationships between employees and board members.	**20**	**20**	**Very Low**

Source: Primary data

The table 4.21 discloses the details about the co-operative governance among the selected dairy co-operative societies. The co-operative governance includes guidance, directions, Participation, the commitment of the Board of Directors towards the activities of dairy co-operative societies. The Board of Directors were not properly guiding and listening the views and opinions of employees and the lack of knowledge and experience of directors were also a problem faced by employees. The result stated the low guidance and directions of BOD members to the employees. But BOD was provided special attention to members and they properly evaluated all the operations of the societies. The employee motivation will help to increase the efficiency of employees. Finally, this will make a growth among the performance of dairy co-operatives.

The above section deals with the performance of four selected dairy co-operative societies. It is evaluated based on the profile of selected dairy co-operatives, farmer member participation, financial indicators, structural factors, managerial factors and legal, political and technological factors. From the study, Moolathara DCS was found to be the best performing society because the membership, financial factors, and milk procurement quantity was more and the employees and members were satisfied with the activities of society. The final result reveals that the Attappadi DCS was not performing well because the milk procurement quantity was less and also the members and the employees were not satisfied with the performance of Board. The Kunnamkattupathy and Menonpara DCS had no significant problems during the study period.

The following section deals with the second objective i.e., to evaluate the services rendered by the selected dairy co-operatives.

4.4 Schemes and services provided by dairy co-operative societies

The second objective of the study i.e., to evaluate the services rendered by the selected dairy co-operatives (2020-21) were discussed in the upcoming part. The variables include production enhancement services, training, and information to members, schemes, and support from dairy co-operatives during the flood, COVID-19. This study will give an outline of the effectiveness of schemes and services among each dairy co-operative society.

4.4.1. Production Enhancement Services

The production enhancement services are the assistance provided to increase the productions. The dairy co-operatives are providing various types of schemes and services to improve the production in dairy farming. The following table explains the production enhancement services offered by the societies.

Table 4.22 Production Enhancement Services

Sl. No.	Name of Scheme/Service	Particulars	Eligibility
1	**Cattle feed Distribution Service**	Society will directly procure the cattle feeds and distributed among the dairy farmers by adding purchase cost with actual price of cattle feed.	All dairy members are eligible.
2	**Distribution of Fodder Seeds**	The fodder seeds are free of charge.	The members rearing more than one cow. There is a priority for women and SC/ST members.
3		A maximum of	The members reared more than two cows and partook in fodder

	Assistance to fodder Irrigation Scheme	Rs. 10000 will be distributed per member in a year.	cultivation for more than 50 cents. There is a priority for women and SC/ST members
		A maximum of Rs. 25000 will be distributed per member in a year	The members reared more than two cows and partook in fodder cultivation for more than 1 acre. There is a priority for women and SC/ST members
4	**Assistance to purchase Chaff cutter**	A maximum of Rs. 10000 will be distributed per member in a year.	The members reared more than two cows and partaking in fodder cultivation for more than 50 cents. There is a priority for women and SC/ST members.
5	**Contingency fund Scheme**	A maximum of Rs. 15000 will be distributed per member in a year.	The members who are pouring milk into society and who are not insured their cows. There is a priority for women and SC/ST members.
6	**Assistance to purchase of milking machine**	A maximum of Rs. 25000 will be distributed per member in a year.	The members rearing more than five cows. There is a priority for women and SC/ST members.
7	**Assistance for construction of cattle shed**	A maximum of Rs. 50000 will be distributed per member in a year.	The members rearing more than five cows. And those whose cattle shed was destroyed. There is a priority for women and SC/ST members.

Source: Primary Data

The table 4.22 explained the details of production enhancement schemes and their eligibility. The schemes related to the production enhancement for dairy farmers includes, cattle feed distribution service, fodder development programmes, contingency

fund scheme, assistance to purchase of milking machine, assistance for construction of cattle shed.

4.4.2 Training and information to members

The selected dairy co-operative societies were not providing any training to the member farmers. Because the members are not interested to attend the training programmes.

The societies need to communicate all the information to the members without any delay. Because this will help to maintain an effective relationship with the members. The following table reveals the level of availability of information from society to the members. Data were collected from the 200 active members and analyzed by using five-point Likert scale.

Table 4. 23 Information to members

Sl. No.	Statements	Score	Index	Opinion
1	The societies are providing information related to schemes and services on time.	**1000**	**100**	**Very High**
2	The societies are sharing information related to schemes and services without delay.	**1000**	**100**	**Very High**
3	The societies are properly communicating the financial details of the society	**1000**	**100**	**Very High**
4	The societies are conveying the information related to the programmes conducted by the societies.	**1000**	**100**	**Very High**
5	The societies are providing information related to elections without delay.	**1000**	**100**	**Very High**

Source: Primary Data

The table 4.23 reveals the level of communication between the societies and members in sharing the information. The respondents opined positively towards all the statements. It indicates the high-level of effective communication between them. This has helped the dairy co-operative societies to maintain a healthy relationship with the members.

4.4.3 Schemes and support from dairy co-operatives during flood, Covid-19.

The dairy farmers in the study area were not affected by the flood of 2018 and 2019. So, the societies don't provide any schemes and services to the dairy farmers. But COVID-19 has affected the respondents. The following table explained the schemes offered through the dairy co-operative societies during COVID-19.

Table 4.24 Schemes and support from dairy co-operatives during Covid-19.

Sl. No.	Name of Scheme/Service	Amount	Eligibility
1	**Distribution of cattle feed At subsidized rate**	Maximum subsidy of Rs. 400 per bag (50 kg)	Those farmers who have poured milk to dairy co-operative societies during April 2021. >10 litres per day = 2 bags 11-20 litres per day=3 bags >20 litres per day = 5 bags
2	**Distribution of green grass and dried feed to dairy farmers at the subsidized rate**	Subsidy of Rs.3/kg for green fodder, Rs.4/ kg for dried fodder	Those farmers who have poured milk to dairy co-operative societies during April 2021.
3	**Distribution of cattle feeding supplement**	Maximum subsidy of Rs. 110/ kg	Those farmers who have poured milk to dairy co-operative societies during April 2021.
4		Minimum of Rs.250 and Maximum of Rs. 1000 per farmer	The members of dairy farmer welfare board and poured milk between March 2 to March 20 2020.

	COVID-19 relief fund	Maximum of Rs.10000 for COVID affected farmers, Rs. 2000 for quarantined farmers	The members of the dairy farmer welfare board.

Source: Primary data

The table 4.24 displayed the Schemes and support received from dairy co-operatives during Covid-19. The distribution of cattle feed at a subsidized rate, distribution of green grass and dried feed to dairy farmers at a subsidized rate, the distribution of cattle feeding supplements and COVID-19 relief fund are the schemes offered by the dairy co-operatives during covid-19.

4.4.4 Dairy farmer welfare schemes

The following table describes the dairy farmer welfare schemes offered by the dairy co-operative. It includes dairy farmer pension schemes, financial assistance for education, marriage financial assistance schemes.

Table 4.25 Dairy farmer welfare schemes

Sl. No.	Name of Scheme/Service	Amount	Eligibility
1	**Dairy Farmer pension**	Rs. 1600 per month	The members of the dairy farmer welfare board poured 500 litres of milk for 5 years and those attained the age of 60.
2	**Dairy safety plan**	A maximum of .Rs. 50000 for Accidental death, Rs.10000 for Permanent disability, and Rs.15000 for Fatal disease will be distributed per member in a year.	The members of the dairy farmer welfare board.

3	**Financial assistance for education**	Rs. 1000 (SSLC), Rs. 1500 (Plus Two), Rs. 2000 (Degree)	The members of the dairy farmer welfare board.
4	**Marriage financial assistance**	Rs. 5000	The members of the dairy farmer welfare board.

Source: Primary data

The table 4.25 explained the details of dairy farmer welfare schemes offered by the selected dairy co-operatives. It includes dairy farmer pension, dairy safety plan, financial assistance for education, and marriage financial assistance.

4.4.5 Evaluation of services offered by the selected dairy co-operative societies

The following table evaluated the functioning of schemes offered through the dairy co-operative societies during the year 2019-20.

Table 4. 26 Evaluation of services offered by the selected dairy co-operative societies during the year 2019-20

Sl. No.	Name of Scheme/Service	Target Amount/ Quantity	Number of Users	Utilized Amount/ Quantity	%age of utilization
Production enhancement services					
1	**Cattle feed scheme**	**25000 bags**	**1542**	**25000 bags**	**100 %**
2	**Distribution of Fodder Seeds**	**3000 kg**	**973**	**3000 kg**	**100 %**
3	**Assistance to fodder Irrigation Scheme**	**Rs. 2 lakhs**	**17**	**Rs. 2 lakhs**	**100 %**
4	**Assistance to purchase Chaff cutter**	**Rs. 5 lakhs**	**42**	**Rs. 4.2 lakhs**	**84 %**

5	**Contingency fund Scheme**	**Rs. 4 lakhs**	**21**	**Rs. 2.1 lakhs**	**52.5 %**
6	**Assistance to purchase of milking machine**	**Rs. 8 lakhs**	**32**	**Rs.7.4 lakhs**	**92.5 %**
7	**Assistance for construction of cattle shed**	**Rs. 2 lakhs**	**4**	**Rs. 2 lakhs**	**100 %**
<u>Schemes and support from dairy co-operatives during flood, Covid-19</u>					
1	**Distribution of cattle feed At subsidized rate (Ongoing)**	**Rs. 2 lakhs**	**984**	**Rs. 1.3 lakhs**	**65 %**
2	**Distribution of green grass and dried feed to dairy farmers at subsidized rate (Ongoing)**	**Rs. 4 lakhs**	**916**	**Rs.3.1 lakhs**	**77.5 %**
3	**Distribution of cattle feeding supplement (Ongoing)**	**Rs. 2 lakhs**	**614**	**Rs.67540**	**67.5 %**
4	**COVID 19 relief fund**	**Rs. 4 lakhs**	**842**	**Rs.356250**	**89.1 %**
<u>Dairy farmer welfare schemes</u>					
1	**Dairy Farmer pension**	**Rs. 4 lakhs**	**21**	**Rs.4 lakhs**	**100 %**
2	**Dairy safety plan**	**Rs. 1 lakh**	**5**	**Rs. 1 lakh**	**100 %**

3	**Financial assistance for education**	**Rs. 1 lakh**	**12**	**Rs. 1 lakh**	**100 %**
4	**Marriage financial assistance**	**Rs. 1 lakh**	**17**	**Rs. 85000**	**85 %**

Source: Primary data

The table 4.26 evaluated the services offered through the selected dairy co-operatives. Among the schemes, cattle feed scheme, fodder distribution scheme, assistance to purchase of milking machinery, dairy farmer pension scheme, dairy safety plan, assistance to children education were marked 100 per cent of utilization in all the dairy co-operatives. It shows the successful implementation of these schemes. The %age of utilization was less for contingency fund scheme (52.5 %), Distribution of cattle feed at subsidized rate (65 %), distribution of green grass and dried feed to dairy farmers at subsidized rate (77.5 %), distribution of cattle feeding supplement (67.5 %), COVID 19 relief fund (67.5 %). The beneficiaries of the schemes based on the eligibility were less for contingency scheme and the ongoing scheme were not fully distributed by the dairy co-operatives.

The second objective was to evaluate the services offered to the dairy farmers through the dairy co-operative societies. The schemes were categorized into production enhancement services, schemes offered during COVID-19, and dairy farmer welfare schemes. The evaluation of schemes indicates the effective utilization of funds for the upliftment of dairy farmers. The detailed assessment of services is explained in the next session.

4.5 Extent of utilization of services by the member farmers

The third objective of the study is to assess the extent of utilization of services by the member farmers of selected dairy co-operative societies. The variables include awareness level about services, frequency of participation, level of utilization of services, and effectiveness of services. The following section will provide the details regarding the Assess the extent of utilization of services by the member farmers.

4.5.1 Awareness level of dairy farmers on schemes and services

The following table measures the awareness level of selected dairy farmers about the schemes and services offered by the four dairy co-operatives. Data were collected from the 200 active members and analyzed by using five-point Likert scale.

Table 4.27 Awareness level of dairy farmers on schemes and services

Sl. No	Schemes and services	Score	Index	Awareness level
Production enhancement services				
1	The respondents are aware of the cattle feed distribution scheme of DCS	**1000**	**100**	**Very High**
2	The respondents are aware of the fodder seeds distribution schemes.	**1000**	**100**	**Very High**
3	The respondents are aware of irrigation schemes for fodder cultivation	**1000**	**100**	**Very High**
4	The respondents are aware of the subsidies for purchasing chaff cutters for fodder cutting.	**1000**	**100**	**Very High**
5	The respondents are aware of the contingency fund scheme.	**1000**	**100**	**Very High**
6	The respondents are aware of the assistance to purchase of milking machine	**1000**	**100**	**Very High**
7	The respondents are aware of the assistance for the construction of the cattle shed	**1000**	**100**	**Very High**
Schemes and support from dairy co-operatives during Covid-19.				
1	The respondents are aware of the distribution of cattle feed at a subsidized rate.	**1000**	**100**	**Very High**
2	The respondents are aware of the distribution of green grass and dried feed at the subsidized rate	**1000**	**100**	**Very High**
3	The respondents are aware of the distribution of cattle feed supplements at the subsidized rate	**1000**	**100**	**Very High**

4	The respondents are aware about the COVID 19 relief fund.	**1000**	**100**	**Very High**
Dairy farmer welfare schemes				
1	The respondents are aware of the dairy farmer pension	**1000**	**100**	**Very High**
2	The respondents are aware of the dairy safety plan schemes.	**1000**	**100**	**Very High**
3	The respondents are aware of the financial assistance for the children of the dairy farmer.	**1000**	**100**	**Very High**
4	The respondents are aware of the financial assistance for the marriage of children of the dairy farmer.	**1000**	**100**	**Very High**

Source: Primary data

The table 4.27 depicts the awareness level of various services and schemes offered through dairy co-operatives to the dairy farmers. The schemes include sales of cattle feed, Fodder seeds, Irrigation, Chaff Cutter, Contingency Fund, Assistance to purchase of milking machine, Assistance for construction of cattle shed, Dairy safety plan, Schemes and support from dairy co-operatives during Covid-19, Dairy farmer pension, Financial assistance for education, and Marriage financial assistance. These schemes were offered by the dairy co-operative societies with the support of the dairy development department, the Government of Kerala. The study found that all the dairy farmers were fully aware of the schemes and services.

4.5.2 Frequency of participation of dairy farmers on schemes and services

The following table assesses the participation level of dairy farmers in the schemes and services provided by the selected dairy co-operatives.

Table 4.28 Frequency of participation of dairy farmers on schemes and services

Sl. No	Schemes and services	Score	Index	Participation level
Production enhancement services				
1	The respondents are participating in the cattle feed distribution scheme of DCS.	**1000**	**100**	**Very High**

2	The respondents are participating in the fodder seeds distribution schemes.	**1000**	**100**	**Very High**
3	The respondents are participating in the irrigation schemes for fodder cultivation	**1000**	**100**	**Very High**
4	The respondents are participating in the subsidies for purchasing chaff cutter for fodder cutting.	**582**	**58.2**	**Moderately High**
5	The respondents are participating in the contingency fund scheme.	**214**	**21.4**	**Low**
6	The respondents are participating in the assistance to purchase of milking machine	**1000**	**100**	**Very High**
7	The respondents are participating in the assistance for construction of cattle shed	**434**	**43.4**	**Moderately High**
Schemes and support from dairy co-operatives during Covid-19.				
1	The respondents are participating in the distribution of cattle feed at subsidized rate.	**1000**	**100**	**Very High**
2	The respondents are participating in the distribution of green grass and dried feed at subsidized rate	**1000**	**100**	**Very High**
3	The respondents are participating in the distribution of cattle feed supplements at subsidized rate	**1000**	**100**	**Very High**
4	The respondents are participating in the COVID 19 relief funds.	**1000**	**100**	**Very High**
Dairy farmer welfare schemes				
1	The respondents are participating in the dairy farmer pension	**240**	**24**	**Low**
2	The respondents are participating in the dairy safety plan schemes.	**324**	**32.4**	**Low**
3	The respondents are participating in the financial assistance for the children of dairy farmer.	**467**	**46.7**	**High**
4	The respondents are participating in the financial assistance for the	**421**	**42.1**	**Moderately High**

	marriage of children of dairy farmer.			

Source: Primary data

The table 4.28 describes the participation level of dairy farmers in the schemes and services. The farmers are actively participating in all the schemes based on their requirements. The involvement was more in the schemes namely cattle feed, fodder seeds, assistance to purchase milking machine, distribution of cattle feed at a subsidized rate, distribution of green grass and dried feed at subsidized rate, and distribution of cattle feed supplement at subsidized rate. Because these were the basic requirements for the dairy farmers. So, they participate in these services very frequently. The participation level in the schemes namely, irrigation, dairy farmer pension, and financial assistance for education. Because the fund allocation was less. The dairy farmers have marked moderately high participation in the schemes viz. chaff cutter, assistance for construction of cattle shed, and marriage financial assistance. Because the fund allocation was very less and the demand for these schemes was also less. The participation level in contingency fund scheme and dairy safety plan schemes were low among the respondents. Because the fund allocation was low and most of the respondents can't meet the eligibility criteria of these schemes.

4. 5.3 Level of utilization of services

The schemes are distributed among the dairy farmers based on their eligibility for schemes. So, all dairy farmers can't utilize the schemes and services offered by the dairy co-operatives. The following table reveals the utilization level of all schemes provided by the dairy co-operatives.

Table 4. 29 Level of utilization of services

Sl. No	Schemes and services	Score	Index	Participation level
Production enhancement services				
1	The respondents have utilized the cattle feed distribution scheme of DCS.	**1000**	**100**	**Very High**
2	The respondents have utilized the fodder seeds distribution schemes.	**1000**	**100**	**Very High**

3	The respondents have utilized the irrigation schemes for fodder cultivation	**240**	**24**	**Low**
4	The respondents have utilized the subsidies for purchasing chaff cutters for fodder cutting.	**312**	**31.2**	**Low**
5	The respondents have utilized the contingency fund scheme.	**248**	**24.8**	**Low**
6	The respondents have utilized the assistance to purchase of milking machine	**244**	**24.4**	**Low**
7	The respondents have utilized the assistance for the construction of cattle shed	**236**	**23.6**	**Low**
Schemes and support from dairy co-operatives during Covid-19.				
1	The respondents have utilized the distribution of cattle feed at subsidized rate.	**896**	**89.6**	**Very High**
2	The respondents have utilized the distribution of green grass and dried feed at subsidized rate	**732**	**73.2**	**High**
3	The respondents have utilized the distribution of cattle feed supplements at subsidized rate	**592**	**59.2**	**Moderately High**
4	The respondents have utilised the COVID 19 relief fund	**1000**	**100**	**Very High**
Dairy farmer welfare schemes				
1	The respondents were utilized the dairy farmer pension	**240**	**24**	**Low**
2	The respondents have utilized the dairy safety plan schemes.	**212**	**21.2**	**Low**
3	The respondents have utilized financial assistance for the children of dairy farmers.	**236**	**23.6**	**Low**
4	The respondents have utilized financial assistance for the marriage of children of the dairy farmer.	**232**	**23.2**	**Low**

Source: Primary data

The table 4.26 analyzed the utilization level of services offered by the dairy co-operative societies. The utilization level was different for all schemes based on the eligibility criteria. The utilization level was more for the schemes namely, cattle feed distribution scheme, fodder seeds distribution schemes, distribution of cattle feed at a subsidized rate, and the dairy farmer pension schemes. Because the target fund for these schemes is more compared to other schemes. The respondents have also utilized the scheme of distributing green grass and dried feed at subsidized rates and the distribution of cattle feed supplements at a subsidized rate. The respondents marked less utilization for the irrigation schemes for fodder cultivation, subsidies for purchasing chaff cutter for fodder cutting, contingency fund scheme, assistance to purchase of milking machine, assistance for construction of cattle shed, and dairy safety plan schemes. So, the fund allocation was very less for the majority of the schemes. This finally leads to the low utilization of schemes offered by the dairy co-operatives.

4.5.4 Effectiveness of schemes and services

The following table represents the effectiveness level of the schemes and services offered by the selected dairy co-operatives. The collected data were analyzed by using five-point Likert scale.

Table 4.30 Effectiveness of schemes and services

Sl. No	Schemes and services	No of respondents	Score	Index	Participation level
	Production enhancement services				
1	The cattle feed distribution scheme was very useful for the dairying.	**200**	**1000**	**100**	**Very High**
2	The high-quality seeds were distributed through the fodder seeds scheme on time.	**200**	**1000**	**100**	**Very High**
3	The irrigation scheme helped for improving fodder cultivation.	**10**	**50**	**100**	**Very High**
4	The purchased chaff cutter through the scheme was	**28**	**140**	**100**	**Very High**

	very useful for fodder cutting.				
5	The contingency fund scheme helped dairy farmers to meet the unexpected death of cattle.	**28**	**140**	**100**	**Very High**
6	The assistance to purchase milking machines supported the dairy farmers in reducing the cost of inputs.	**11**	**55**	**100**	**Very High**
7	The respondents are very satisfied with the scheme for the construction of the cattle shed.	**8**	**45**	**100**	**Very High**
	Schemes and support from dairy co-operatives during Covid-19.				
1	The quality and quantity of distributed cattle feed are very high.	**174**	**870**	**100**	**Very High**
2	The distributed green grass and dried feeds are very productive.	**133**	**665**	**100**	**Very High**
3	The quality and quantity of cattle feed supplements are highly satisfactory.	**98**	**490**	**100**	**Very High**
4	The COID 19 relief fund was highly effective for the dairy farmers.	**200**	**1000**	**100**	**Very High**
	Dairy farmer welfare schemes				
1	The dairy farmer pension is distributed to the dairy farmers without delay.	**10**	**50**	**100**	**Very High**
2	The dairy safety plan was highly useful for dairy farmers.	**2**	**10**	**100**	**Very High**
3	The financial assistance for the children of the dairy farmer was distributed on time.	**9**	**45**	**100**	**Very High**

4	The financial assistance for the marriage of children of the dairy farmer was distributed on time.	**8**	**40**	**100**	**Very High**

Source: Primary data

Table 4.30 explains the effectiveness level of schemes and services provided by the dairy co-operative societies. The dairy farmers were very much satisfied with all the schemes offered through the dairy co-operatives.

The third objective evaluated the effectiveness of schemes and services offered through the dairy co-operatives. The dairy farmers were positively responded to the effectiveness of the all schemes except the schemes and support during COVID-19. Because the distribution of COVID related scheme is still ongoing. So, the proper evaluation is not possible during this period.

The next section explains the empowerment level of respondents through the dairy co-operative societies.

4.6 Empowerment of member farmers through dairy co-operatives

The empowerment of a dairy farmer is the process through which a farmer perceives that he/she controls his or her situation. The following section deals with the economic, social, psychological, and political empowerment of dairy farmers through dairying.

4.6.1 Economic empowerment of dairy farmers

Economic empowerment involves both the ability to succeed and the power to make and act on economic decisions. The following table measured the economic empowerment level of selected dairy farmers.

Table 4.31 Economic empowerment of dairy farmers

Sl. No	Statements	Score	Index	Opinion level
1	Society encourages the members by providing various financial supports.	**814**	**80**	**High**
2	Society enables the members to develop professional skills in dairying.	**638**	**64**	**High**

3	Society enables the members to improve their saving ability from dairying.	**796**	**80**	**High**
4	Society enables the members to achieve the goal of agricultural development.	**853**	**85**	**Very High**
5	Society enables the members to participate actively in the dairy development projects.	**343**	**34**	**Low**
6	Society enables the members to improve farm production and productivity.	**834**	**83**	**Very High**
7	Society enables the members for effective utilization of materials and dairy services.	**984**	**98**	**Very High**
	Composite Index	**5262**	**75.2**	**High**

Source: Primary data

The table 4.31 represents the extent of economic empowerment among 200 dairy farmers. It was measured by using seven statements linked with economic empowerment. The farmers were strongly agreed that the dairy co-operative helped to achieve the goal of agricultural development, to improve farm production and productivity, and for effective utilization of materials and dairy services. They were also agreed that dairy society enables the members to develop professional skills in dairying, they are providing various financial supports, and to improve their saving habit from dairying. They opined low empowerment to the participation level in dairy development projects. So, the societies need to help their members to participate actively in the dairy development projects.

4.6.2 Social empowerment of dairy farmers

Social empowerment is the process of developing a sense of autonomy and self-confidence and acting individually to change social relations. The succeeding data measured the social empowerment level of selected dairy farmers.

Table 4.32 Social empowerment of dairy farmers

Sl. No	Statements	Score	Index	Opinion level
1	Society enables the members to achieve the goal of social freedom.	**645**	**65**	**High**
2	Society enables the members to fight against misconceptions related to dairying.	**887**	**89**	**Very High**
3	Society enables the members to actively get involved in social service.	**524**	**52**	**Moderately High**
4	Society enables the members for improving their social status.	**694**	**69**	**High**
5	Society enables the members for better social relations.	**724**	**72**	**High**
6	Society enables the members for improving social responsibility**.**	**641**	**64**	**High**
7	Society enables the members to fight against human rights violations.	**303**	**30**	**Low**
8	Society enables the members to work with social equality.	**689**	**69**	**High**
	Composite index	**5107**	**63.8**	**High**

Source: Primary data

Table 4.32 denotes the opinion of members towards the social empowerment of farmers through dairy co-operatives. The members strongly agreed that society permits the members to fight against misconceptions related to dairying. Further, they agreed that the society empowers the members to attain the goal of social freedom, for improving their social status, for upgraded social relations., for improving social responsibility, to work with social equality. They were opined moderately high for the support for involvement in social service and low for the fight against human rights violations. So, the societies must provide supports to the members to participate in social service activities and to fight against human rights violations.

4.6.3 Psychological empowerment of dairy farmers

Psychological empowerment is an important motivational resource that helps to enhance engagement in various activities. The following table evaluated the psychological empowerment level of selected dairy farmers.

Table 4.33 Psychological empowerment of dairy farmers

Sl. No	Statements	Score	Index	Opinion level
1	Society enables the members to increase their confidence about their ability to do their work.	**932**	**93**	**Very High**
2	Society motivates the members to increase their participation in dairy farming.	**934**	**93**	**Very High**
3	Society helps the members to learn more about dairying.	**904**	**90**	**Very High**
4	Society supports the members to improve their risk-taking capacity.	**826**	**83**	**Very High**
5	Society improves the decision-making capacity of member farmers.	**751**	**75**	**High**
6	Society helps to reduce the stress level of members related to dairying.	**662**	**66**	**High**
7	Society helps to improve the perception level of member farmers about the dairy farming.	**526**	**53**	**Moderately High**
	Composite Index	**5535**	**79.1**	**High**

Source: Primary data

Table 4.33 symbolizes the judgment of members towards the psychological empowerment of members through dairy co-operatives. The members were strongly agreed that the society empowers the members to raise the confidence about the capacity to do their work, to increase the involvement and to acquire more ideas about dairying, to reduce the stress level of members related to dairying, and to improve the risk-taking capacity. The farmers also agreed that the society helped to expand the decision-making capacity of members. But the farmers don't have any opinion towards the support provided by the society to improve their perception level.

4.6.4 Political empowerment of dairy farmers

Political empowerment is the process of transferring various elements of power to those who do not have it. The following table evaluated the influence of dairy co-operative in the political empowerment of selected dairy farmers.

Table 4.34 Political empowerment of dairy farmers

Sl. No	Statements	Score	Index	Opinion level
1	Society enables the members to acquire leadership development opportunities.	**375**	**37**	**Low**
2	Society enables the members to actively participate in political activities.	**241**	**24**	**Low**
3	Society enables the members to manage the political crisis.	**234**	**23**	**Low**
4	Society enables the members to participate actively in elections.	**207**	**21**	**Low**
5	Society enables the members to demand their rights and privileges.	**214**	**21**	**Low**
	Composite index	**1271**	**25.42**	**Low**

Source: Primary data

The table 4.34 indicates the influence of dairy co-operative in the political empowerment of selected dairy farmers. The respondents marked a low level of empowerment towards all statements such as the leadership development opportunities, participation in party elections, and demanding their rights and privileges of members and support in managing the political crisis. The findings show that there was no political empowerment happened among the members through the selected dairy co-operatives.

4.6.5 Economic motivation of dairy farmers

Economic motivation is the motivation for the person to work to maximize their profits. The following table assesses the economic motivation level among the selected dairy farmer respondents.

Table 4.35 Economic motivation of dairy farmers

Sl. No.	Statement	Score	Index	Opinion
1	A dairy farmer should work towards larger yields and economic profit.	**1000**	**100**	**Very High**
2	The most successful dairy farmer is the one who makes the most profit.	**1000**	**100**	**Very High**

3	A dairy farmer should try any new dairying idea which may help him to earn more money.	**1000**	**100**	**Very High**

Source: Primary data

The table 4.35 measured the economic motivation level of the selected dairy farmer respondents. They opined positively for all the statements. So, the result proved that the dairy farmer should work towards larger yields and economic profit, the successful dairy farmer is the one who makes the most profit, and the dairy farmer should try new dairying ideas to earn more money.

4.6.6 Risk orientation of dairy farmers

Risk orientation reflects the attitude towards seeing risk either as downside loss or upside opportunity. The following table examines the risk orientation among respondents.

Table 4.36 Risk orientation of dairy farmers

Sl. No.	Statement	Score	Index	Opinion
1	Trying entirely new technology involves high risk, but it is worth it.	**1000**	**100**	**Very High**
2	It is good for a dairy farmer to take the risk when there is a possibility that the change will give a high level of success.	**1000**	**100**	**Very High**
3	A dairy farmer who is willing to take greater risk than the average dairy farmer usually does better.	**1000**	**100**	**Very High**

Source: Primary data

The table 4.36 examined the risk orientation level in dairy farming. They opined positively to all the statements. The findings agreed that trying a new technology involves high risk, but it is worth it, it is good for a dairy farmer to take the risk when there is a possibility of success, and a dairy farmer who is willing to take greater risk usually does better.

Table 4.37 The composite index of Empowerment

Sl. No.	Types of Empowerments	Composite Index	Opinion
1	Economic empowerment	75.2	**High**
2	Social empowerment	63.8	**High**
3	Psychological empowerment	79.1	**High**
4	Political Empowerment	25.42	**Low**

Source: Primary data

The table 4.37 indicates the empowerment level of dairy farmers through dairy co-operatives. The respondents positively opined on the economic, social, and psychological empowerment achieved through the dairy co-operatives. Political empowerment was not attained by the respondents through the dairy co-operatives. The following segment deals with the next objective i.e., problems faced by the dairy farmers.

4.7 Problems faced by dairy farmers

Dairy farmers are facing a series of challenges related to dairy farming. The effect of problems will vary from one location to another location. The following segment will clearly explain the problems faced by the respondent dairy farmers. The variables include milk production and procurement, pre and post-flood effect in milk production and procurement, the impact of covid-19 in dairy farmers, constraints experienced by farmers in availing schemes, and support from dairy co-operatives and government policies.

4.7.1 Problems related to milk production

Milk production is an important factor in dairy farming. Because the profitability of dairy farming is decided based on milk production. The following data expressed the problems faced by dairy farmers. The collected data were analyzed by using three-point Likert scale.

Table 4.38 Problems related to milk production

Sl. No.	Problems	Score	Index	Opinion
1	The climatic variation highly affected the quantity of milk production.	600	100	High
2	The cattle diseases highly affected milk production.	294	49	Moderate
3	The lack of nutrition leads to a decrease in the level of milk production	200	33	Nil
4	The irregular milking frequency negatively affected milk production.	200	33	Nil
5	Genetic problems are the main reason for reducing milk production.	200	33	Nil
	Composite Index	1494	49.8	Moderate

Source: Primary data

Table 4.37 specifies the problems faced by the farmers in milk production. The climatic issues were the major problems in milk production. The climatic variation was the major factor behind the milk production problems. Because the highest temperature in Kerala was always marked in the Palakkad district.

4.7.2 Problems related to milk procurement

Milk procurement is an important function of the dairy co-operative societies. The following table evaluated the problems faced by dairy farmers during milk procurement.

Table 4.39 Problems related to milk procurement

Sl. No.	Problems	Score	Index	Opinion
1	The dairy farmers faced a Lack of hygienic and sanitization measures in the dairy co-operatives.	200	33	Nil
2	The milk procurement was reduced due to a lack of transportation facility	200	33	Nil
3	The staffs are not properly recording the milk supply details	200	33	Nil

4	The DCS doesn't have any milk storage facilities	**200**	**33**	**Nil**
5	The societies don't have a proper milk testing mechanism	**200**	**33**	**Nil**
	Composite index	**1000**	**33**	**Nil**

Source: Primary data

Table 4.38 specifies the problems that are faced by dairy farmers in milk procurement. But none of the dairy farmers were facing difficulties in milk procurement. All of them were satisfied with the procurement facilities and arrangements.

4.7.3 Other problems

The following table listed the other major problems faced by the selected dairy farmers in dairying.

Table 4.40 Other problems faced by dairy farmers

Sl. No.	Problems	Score	Index	Opinion
1	The non-availability of labour is the major problem faced by dairy farmers.	**416**	**69**	**High**
2	The delayed payments from dairy co-operatives affect the investments in dairying.	**200**	**33**	**Nil**
3	The non-availability of crossbreed animals affects the productivity of dairying.	**200**	**33**	**Nil**
4	The Lack of sufficient veterinary services affected the health of cattle.	**448**	**75**	**High**
	Composite index	**1264**	**52.6**	**Moderate**

Source: Primary data

Table 4.39 lays down the other basic problems faced by the dairy farmers. This includes non-availability of labour, delayed payments from DCS, low productivity of cattle, lack of crossbreed animals, lack of sufficient veterinary services. Out of these, low accessibility to veterinary services and lack of sufficient labour were the main problems faced by the selected dairy farmers. All payments for dairy-related dealings were up to date and, they have not faced difficulties in the availability of crossbreed

cattle. So, it was a benefit for the dairy farmer to manage the financial and farm requirements.

4.7.4 Pre and post-flood effect in milk production and procurement

Out of 200 dairy farmers, none of them were affected by the flood of 2018 and 2019.

4.7.5 Impact of COVID 19 in dairy farmers

The COVID 19 affected all the respondents. The level of effect of COVID 19 were explained in the table below.

Table 4.41 Level of the effect of COVID 19 on the dairy farming sector

Sl. No.	Particulars	Score	Index	Opinion
1	The COVID 19 negatively affected milk production from dairying.	**200**	**33**	**Nil**
2	The COVID lockdown affected milk transportation to DCS	**600**	**100**	**High**
3	The COVID 19 affects the physical structure of the farm	**200**	**33**	**Nil**
4	It affected the veterinary services for cattle	**294**	**49**	**Moderate**
5	It leads to the death of cattle	**200**	**33**	**Nil**
6	It affected the local milk sale of dairy farmers.	**200**	**33**	**Nil**
7	It affected the quantity of milk procured by the dairy co-operative society	**600**	**100**	**High**
8	The Profit from the sale of milk was reduced during COVID 19 period.	**600**	**100**	**High**
9	The lack of Food Stock was the main problem faced in the dairying.	**312**	**52**	**Moderate**
10	The availability of Labour services was reduced during COVID 19.	**442**	**74**	**High**
	Composite Index	**3648**	**60.8**	**Moderate**

Source: Primary data

Table 4.40 described the effect of COVID 19 on dairying. The quantity of milk procured by the dairy co-operative society, transportation, profit from the sale of milk,

and labour services was mainly affected due to COVID 19 pandemic. The availability of labour services was very less due to lockdowns. And the Milma has stopped the milk procurement for two days. It leads to the wastage of large quantities of milk and a decrease in income from milk sales. The availability of veterinary services and food stock were moderately affected due to COVID 19 pandemic. The milk production, dairy farm structure, animal strength, and local milk sales were not affected by COVID 19.

4.7.6 Constraints experienced by farmers in availing schemes and support from dairy co-operatives and Government policies

The lack of availability of schemes and support is one of the main problems faced by the respondents. This situation discourages people to enter into dairy farming. The following table reveals the difficulties faced by the respondents to avail the schemes.

Table 4.42 Constraints experienced by farmers in availing schemes and support from dairy co-operatives and Government policies

Sl. No.	Statements	Score	Index	Opinion
1	The dairy farmers had to attend many procedures to avail the benefits.	**600**	**100**	**High**
2	The respondents received inadequate support from the dairy co-operative society/Government.	**325**	**54**	**Moderate**
3	The effectiveness of the schemes was reduced due to the slow responses from the DCS and Government.	**484**	**81**	**High**
4	The lack of knowledge about banking activities was the major problem faced by the dairy farmers to avail subsidies.	**294**	**49**	**Moderate**
5	The fodder seeds supplied were not of good quality.	**200**	**33**	**Nil**
	Composite Index	**1903**	**63**	**Moderate**

Source: Primary data

Table 4.41 defined various constraints faced by dairy farmers in availing schemes and support from the dairy co-operative society and government. The procedural time

delay to avail benefits, slow responses, was the major difficulties faced by the dairy farmer. Lack of knowledge about banking services and functions related to subsidies was also one of the problems that exist among them. So, the government and dairy co-operative societies must evaluate the loopholes of all schemes and take necessary actions to solve these problems.

Table 4.43 The composite index of problems faced by the dairy farmers.

Sl. No	Problems	Score	Index	Opinion
1	**Problems related to milk production**	**1494**	**49.8**	**Moderate**
2	**Problems related to milk procurement**	**1000**	**33**	**Nil**
3	**Other problems faced by dairy farmers**	**1264**	**52.6**	**Moderate**
3	**Level of effect of COVID-19**	**3648**	**60.8**	**Moderate**
4	**Constraints faced in availing schemes**	**1903**	**63**	**Moderate**

Source: Primary data

The table 4.43 reveals the major findings of the problems faced by the dairy farmers in dairying. Out of four problems, none of the farmers were faced the problems related to milk procurement. It indicated the effective milk procurement methods adopted by the dairy co-operative societies. But the problems related to milk production, COVID-19, availing services were the existing among the dairying. These problems were affecting the growth of dairying.

This chapter explained about five objectives and its results. Based on this analysis, the findings were summarised in the next chapter.

CHAPTER V

SUMMARY AND CONCLUSION

CHAPTER V

SUMMARY AND FINDINGS

The present study entitled "Institutional intervention by dairy co-operatives in Palakkad district" focuses on the objectives viz; to analyze the performance of selected dairy co-operatives in the Palakkad district, to evaluate the services rendered by the selected dairy co-operatives, to assess the extent of utilization of services by the member farmers, to assess the role of selected dairy co-operatives in the empowerment of member farmers and, to study the problems faced by the dairy farmers. The primary data for the study were collected from active dairy farmer members (200), executive committee members (36) and employees (20) of four selected dairy co-operative societies. Secondary data was collected from the published annual reports for the reference period of ten years from 2010-11 to 2019-20. The growth index, composite index, compound annual growth rate, and percentages were administrated for the data analysis.

The major findings of the study are summarized and presented in the sequence given below.

5.1.1 Performance of selected dairy co-operatives in the Palakkad district

5.1.2 Services rendered by the selected dairy co-operatives

5.1.3 Extent of utilization of services by the member farmers

5.1.4 Role of selected dairy co-operatives in the empowerment of member farmers

5.1.5 Problems faced by the dairy farmers.

5.1. Performance of selected dairy co-operatives in the Palakkad district

5.1.1. Profile of selected dairy co-operative societies

5.1.1.1 Membership

The total membership of the Moolathara dairy co-operative society has increased to 492 in the year 2019-20 from 234 in 2010-11 with a CAGR of 7.7. Out of 492 members, 376 were pouring members and 116 were non-pouring members. It is clear from the figure that the female membership within the pouring and non-pouring categories show a dismal picture compared to male members.

The overall membership of the Kunnamkattupathy dairy co-operative society has increased to 297 in 2019-20, from 238 in 2010-11 with the lowest CAGR of 2.2. The figure clearly shows the current status of pouring and non-pouring members in Kunnamkattupathy dairy co-operative society. Currently, the society had 200 pouring members and 97 non-pouring members. The female membership in the pouring and non-pouring categories was less. It indicates the less participation level of females in this dairy co-operative society. Among male members, pouring members have exceeded the non-pouring members. So, the male members of the Kunnamkattupathy dairy co-operative society had supplied more milk than female members.

The Menonpara dairy co-operative society's overall membership has increased to 281 in 2019-20, from 198 in 2010-11 with a CAGR of 3.5. The graph clearly describes the present situation of pouring and non-pouring members of the Menonpara dairy co-operative society. The society had 189 pouring members and 92 non-pouring members. The female members of the society in the pouring and the non-pouring group were in poor condition. It reflects the low degree of female engagement in this dairy co-operative society. The pouring members have exceeded the non-pouring members in the male category. This reflects the active participation of male members in the Menonpara dairy co-operative society.

The number of members of the Attappadi dairy co-operative society has increased to 472 in 2019-20 from 373 in 2010-11with a CAGR of 2.4. Out of 472 members, 337 were pouring members and 135 were non-pouring members. The graph clearly illustrates the less involvement of females in the pouring and non-pouring category compared to males in Attappadi dairy co-operative society. The membership trend expresses the active engagement of male members in the Attappadi dairy co-operative society.

5.1.1.2 Milk Procurement

During the year 2019-20, the milk procurement was more in Moolathara dairy co-operative society (60.73 lakh litre) and less in Attappadi dairy co-operative society (30.78 lakh litre). Because the highest milk pouring members were more in Moolathara dairy co-operative society and less in Attappadi dairy co-operative society. The CAGR was highest in Attappadi dairy co-operative society (6.6) and lowest in Moolathara dairy

co-operative society (3.4). The CAGR of Kunnamkattupathy and Menonpara dairy co-operative society was 4.2 and 4.1 respectively. It indicates the significant growth in milk procurement in Attappadi dairy co-operative society compared to other societies.

The price was fixed by KCMMF based on the tested quality and quantity of milk. So, the price of milk will be different for all societies according to the quality of milk. Out of these societies, the CAGR was more in Attappadi dairy co-operative society (4.7) and less in Menonpara dairy co-operative society (3.7). The CAGR of Moolathara and Kunnamkattupathy dairy co-operative society was 4.1 and 4.4 respectively. It could be inferred that the average price per litre for milk procurement of each society shows an increasing trend throughout the study period.

The amount was calculated based on the price and quantity of procured milk by the societies. In the year 2019-20, the highest milk procurement value was achieved by Moolathara dairy co-operative society (Rs. 2261.59 lakh) and lowest by Attappadi dairy co-operative society (Rs. 1125.32 lakh). The CAGR was more in Attappadi dairy co-operative society (11.6) and less in Moolathara dairy co-operative society (7.7). The CAGR of Kunnamkattupathy and Menonpara dairy co-operative society was 8.8 and 8 respectively. This shows the significant growth rate in quantity and quality of procured milk in Attappadi dairy co-operative society compared to others.

5.1.1.3 Local Milk Sale

In the year 2019-20, Menonpara dairy co-operative society has the highest (0.21 lakh litre) and Kunnamkattupathy dairy co-operative society has the least quantity of local milk sale (0.08 lakh litre). The CAGR was more in Menonpara dairy co-operative society (8.8) and less in Moolathara dairy co-operative society (4.1). And the CAGR of Kunnamkattupathy and Attappadi dairy co-operative society was 4.8 and 4.5 respectively. The growth index of local sale quantity showed a fluctuating trend in all the societies due to variance in the demand for milk by the local consumers. In general, the demand for local milk sales was less in each society due to a large number of local milk producers.

The price for local milk sales was the same for each society. Because it was decided based on the market price of Milma. The price of local milk sales was displayed

an increasing trend with a CAGR of 4.6 in all societies. The amount was calculated based on the price and quantity of locally sold milk by the societies. According to 2019-20, the highest amount through local milk sale was achieved by Menonpara dairy co-operative society (Rs. 9.24 lakh) and the lowest amount by Kunnamkattupathy dairy co-operative society (Rs. 3.52 lakh). The CAGR was less in Moolathara dairy co-operative society (8.9) compared to other societies. The CAGR of Attappadi and Menonpara dairy co-operative society was 9.3 and 13.9 respectively. The CAGR trend shows the highest annual growth rate in price and quantity of locally sold milk in Menonpara dairy co-operative society.

5.1.1.4 Sales to the MRCMPU

The Moolathara, Kunnamkattupathy, and Menonpara dairy co-operative societies were supplied milk to the Palakkad Milma dairy plant. And Attappadi dairy co-operative society was supplied to the Attappadi Milma dairy plant. The quantity of dairy plant sales was more in Moolathara dairy co-operative society (60.61 lakh litre) with less CAGR of 3.4. Because society has the highest quantity of milk procurement and less quantity of local milk sales. The Attappadi dairy co-operative society has the least quantity of dairy plant sales (30.64 lakh litre) with the highest CAGR of 6.7.

The price was decided based on the price chart issued by KCMM. So, the price of milk will be different for each society according to the quantity and quality of milk. Out of these societies, the CAGR was more in Kunnamkattupathy and Menonpara dairy co-operative society (4.5) and less in Moolathara and Attappadi dairy co-operative society (3.9). It could be inferred that the average price for milk procurement of each society shows an increasing trend during the study period.

The amount was calculated based on the price and quantity of dairy plant milk sold by the societies. According to 2019-20, the highest amount through dairy plant was achieved by Moolathara dairy co-operative society (Rs. 2305.6 lakh) with less CAGR of 7.5 and the lowest amount by Attappadi dairy co-operative society (Rs. 1114.9 lakh) with highest CAGR of 10.8. The CAGR of Kunnamkattupathy and Menonpara dairy co-operative society was 8.9 and 8.7 respectively. The CAGR trend shows the highest annual growth rate in price and quantity of dairy plant sale of milk in Attappadi dairy co-operative society**.**

5.1.2 Farmer Member participation

Member participation shows the participation level of members among the functions of an organization. Dairy farmers are members of dairy co-operatives. The farmer member participation assessment consisted of the farmer member participation level using the index method. It includes the involvement of members in meetings, elections, milk supply, social activities, and decision-making. The respondents opined positively towards all the statements. Out of six statements, the interest of members in receiving advice related to dairying was comparatively less among the respondents. So, the final result states the active farmer member participation in the dairy co-operative societies.

Out of 200 respondents, 98 farmers (49%) were having a membership duration between 4 to 8 years. And 83 farmers (41.5%) were having membership for more than 8 years. Only 19 farmers (9.5%) have membership with less than 4 years. Most of the dairy farmers of Moolathara dairy co-operative (23 farmers) were categorized in more than 8-year duration. The Kunnamkattupathy and Menonpara dairy co-operatives were having a maximum of members in 4 years to 8-year membership periods. The Attappadi dairy co-operative had equal farmer distribution in the 4 to 8-year category and greater than the 8-year category. So, most of the farmers were having a membership duration between 4 years to 8 years.

5.1.3 Financial indicators of the selected dairy co-operatives

5.1.3.1 Share capital

All the dairy co-operatives showed an increasing trend of share capital over the years due to the rise in membership. The CAGR was higher for Moolathara dairy co-operative society (7.5) and lowest for Kunnamkattupathy dairy co-operative society (2.2). The CAGR of Menonpara dairy co-operative society was 3.4 and Attappadi dairy co-operative society was 2.3.

5.1.3.2 Working Capital

The CAGR of working capital was more in Attappadi dairy co-operative society (15.5) and less in Menonpara dairy co-operative society (11.3). The CAGR of Kunnamkattupathy and Moolathara dairy co-operative society were 11.8 and 12.3

respectively. The increasing trend of working capital revealed that each society has an adequate amount of funds to meet the day-to-day operations without any financial shortage.

5.1.3.3 Reserve

The CAGR of Attappadi dairy co-operative society (10.2) was higher and lesser in Moolathara dairy co-operative society (4.3). It means the annual reserve allocation during the study period was more in Attappadi dairy co-operative society and less in Moolathara dairy co-operative society. The CAGR of Kunnamkattupathy and Menonpara dairy co-operative society were 6.3 and 9.5 respectively. Each society has properly maintained the reserves each year according to their net profit.

5.1.3.4 Net Profit

The highest CAGR of net profit is in Attappadi dairy co-operative society (10.2) and lowest in Moolathara dairy co-operative society (4.3). The amount of net profit was more in Moolathara dairy co-operative society. But the annual growth rate during the study period was less compared to other dairy co-operatives. The quantity of net profit was less and the annual growth rate was high in Attappadi dairy co-operative society. The CAGR of net profit in Kunnamkattupathy and Menonpara dairy co-operatives were 6.3 and 9.5 respectively. The trend of net profit showed positive growth in each dairy co-operative society. It indicates the progress of selected dairy co-operative societies throughout the study period.

5.1.3.5 Structural Factors

The opinion of respondents for all statements is very low. It indicates the proper management techniques adopted by the four selected dairy co-operatives.

5.1.3.6 Managerial Factors

Administrative factors were studied with three dimensions, namely related to the general body, related to executive committee meetings, and related to the audit. The study reveals that the general body is held regularly with timely notification and full participation. It also reveals that the executive committee meetings are held regularly with adequate documents and information’s circulated well in advance. Further, the audit of the selected dairy co-operative societies is carried out by department auditors

in time, and rectification of audit defects is considered as prime activity by the selected dairy co-operative societies.

5.1.3.7 Legal factors

The result stated that the societies are functioning according to the bylaw. The selected societies are properly maintained the financial records. The conduct of election, audit, enrolment of members was as per the rules. It indicates that the selected dairy co-operative societies properly followed the rules and regulations. It helped the societies for their performance growth.

5.1.3.8 Political factors

The outcome state that there was no political interference in the performance of the dairy co-operative society. The societies were operating only for the betterment of dairy farmers. All members were considered equally. The respondents opined that the political power has not prevailed in any of the selected dairy co-operative societies.

5.1.3.9 Infrastructural and technological details of dairy co-operative societies

Land, building, computer, printer, dish and vessels, testing machines were the basic facilities and equipment used by the societies. The dish and vessels include bulk milk cooler and milk cans which are used for milk storing and milk transportation purposes. The Ekomilk Ultra Milk Analyzer was used by the societies for milk testing. It could be inferred that the selected dairy co-operative societies had sufficient facilities for its proper functioning.

5.1.4.0 Functional factors

Milk procurement and milk marketing were the main functions of dairy co-operative societies. The dairy farmers have marked positive opinions towards the maintenance of proper records, dividend distribution, testing equipment, and hygiene during milk procurement. The members of the society were directly poured the milk into society on regular basis. But the societies don't have trained Artificial Insemination (AI) and Veterinary First Aid (VFA) workers to guide the dairy farmers. So, dairy farmers have used the services of private clinics and government veterinary hospitals to solve the problems. But consulting a private veterinary doctor and availing of their services incur costs. So, it is better to appoint an AI and VFA worker in the societies.

Each society has proper milk storage facilities like bulk milk coolers. The price for the procured milk was calculated based on the price chart of the KCMMF union. The local sale price of milk was decided with the opinions of the managing committee. None of the societies undertaken the sample sale of milk.

5.1.4.1 Human resource factors

The employees marked positive responses towards the organizational climate and job satisfaction levels in dairy co-operative societies. The organizational climate includes professional skill, commitment, salary hike, performance appraisal, interpersonal relations, organizational facilities, for the employees. And the job satisfaction level includes satisfaction related to services and facilities offered by the selected dairy co-operative societies and the behavior of the board of directors and members towards the employees. The employees were positively responded to these factors. It indicates that the societies were providing special care to the employees for increasing the efficiency of the work.

5.1.4.2 Co-operative governance with respect to employees

The co-operative governance includes guidance, directions, Participation, the commitment of the board of directors towards the activities of dairy co-operative societies. The respondents opined 'moderately high' for the knowledge and experience of BOD. The result stated the low guidance and directions of BOD members to the employees. But BOD was provided special attention to members and they properly evaluated all the operations of the societies. Employee motivation will help to increase the efficiency of employees. Finally, this will make a growth among the performance of dairy co-operatives.

5.2 Schemes and services provided by dairy co-operative societies

5.2.1 Production Enhancement Services

The cattle feed distribution service, distribution of fodder seeds, assistance to fodder irrigation scheme, assistance to purchase chaff cutter, contingency fund scheme, assistance to purchase of milking machine, and assistance for construction of cattle shed were the production enhancement services offered by the selected dairy co-operatives.

5.2.2 Training and information to members

The selected dairy co-operative societies were not providing any training to the member farmers. Because the members are not interested to attend the training programmes. The societies need to communicate all the information to the members without any delay. Because this will help to maintain an effective relationship with the members. The respondents marked positive opinion towards the communication from the dairy co-operatives. So, it indicates the healthy relationship maintained by the dairy co-operatives with members.

5.2.3 Schemes and support from dairy co-operatives during flood, Covid-19.

The dairy farmers in the study area were not affected by the flood of 2018 and 2019. So, the societies don't provide any schemes and services to the dairy farmers. But covid-19 affected the respondents. The distribution of cattle feed at subsidized rate, distribution of green grass and dried feed to dairy farmers at the subsidized rate, distribution of cattle feeding supplement and covid-19 relief fund were the schemes and support from dairy co-operatives during covid-19.

5.2.4 Dairy farmer welfare schemes

The dairy farmer pension, dairy safety plan, financial assistance for education, and marriage financial assistance were the dairy farmer welfare schemes offered through dairy co-operatives.

5.2.5 Evaluation of services offered by the selected dairy co-operative societies

Among the schemes, cattle feed scheme, fodder distribution scheme, assistance to purchase of milking machinery, dairy farmer pension scheme, dairy safety plan, assistance to children education were marked 100 per cent of utilization in all the dairy co-operatives. It shows the successful implementation of these schemes. The percentage of utilization was less for contingency fund scheme (52.5 %), Distribution of cattle feed at subsidized rate (65 %), distribution of green grass and dried feed to dairy farmers at subsidized rate (77.5 %), distribution of cattle feeding supplement (67.5 %), COVID 19 relief fund (67.5 %). The beneficiaries of the schemes based on the eligibility were less for contingency scheme and the ongoing scheme were not fully distributed by the dairy co-operatives

5.3 Extent of utilization of services by the member farmers

5.3.1 Awareness level of dairy farmers on schemes and services

The schemes include sale of cattle feed, fodder seeds, irrigation, chaff cutter, contingency fund, assistance to purchase of milking machine, assistance for construction of cattle shed, dairy safety plan, schemes and support from dairy co-operatives during covid-19, dairy farmer pension, financial assistance for education, and marriage financial assistance. These schemes were offered by the dairy co-operative societies with the support of the dairy development department, the government of Kerala. The study found that all the dairy farmers were fully aware of the schemes and services.

5.3.2 Frequency of participation of dairy farmers on schemes and services

The farmers are actively participating in all the schemes based on their requirements. The involvement was more in the schemes namely cattle feed, fodder seeds, assistance to purchase milking machine, distribution of cattle feed at a subsidized rate, distribution of green grass and dried feed at subsidized rate, and distribution of cattle feed supplement at subsidized rate. Because these were the basic requirements for the dairy farmers. So, they participate in these services very frequently. The participation level in the schemes namely, irrigation, dairy farmer pension, and financial assistance for education. Because the fund allocation was less compared to the highly participated schemes. The dairy farmers have marked moderately high participation in the schemes viz. chaff cutter, assistance for construction of cattle shed, and marriage financial assistance. Because the fund allocation was very less and the demand for these schemes was also less. The participation level in contingency fund scheme and dairy safety plan schemes were low among the respondents. Because the fund allocation was low and most of the respondents can’t meet the eligibility criteria of these schemes.

5.3.3 Level of utilization of services

The utilization level was different for all schemes based on the eligibility criteria. The utilization level was more for the schemes namely, cattle feed distribution scheme, fodder seeds distribution schemes, distribution of cattle feed at a subsidized rate, and the dairy farmer pension schemes. Because the target fund for these schemes is more

compared to other schemes. In the case of dairy farmer pension schemes, only 10 farmers are eligible for the pension scheme. The respondents have also utilized the scheme of distributing green grass and dried feed at subsidized rates and the distribution of cattle feed supplements at a subsidized rate. The respondents marked less utilization for the irrigation schemes for fodder cultivation, subsidies for purchasing chaff cutter for fodder cutting, contingency fund scheme, assistance to purchase of milking machine, assistance for construction of cattle shed, and dairy safety plan schemes. So, the fund allocation was very less for the majority of the schemes. This finally leads to the low utilization of schemes offered by the dairy co-operatives.

5.3.4 Effectiveness of schemes and services

The dairy farmers were very much satisfied with the all schemes offered through the dairy co-operatives. The number of utilized dairy farmers was less in number. But they opined high effectiveness to all the schemes.

5.4 Empowerment of member farmers

5.4.1 Economic empowerment of dairy farmers

It was measured by using seven statements linked with economic empowerment. The farmers were strongly agreed that the dairy co-operative helped to achieve the goal of agricultural development, to improve farm production and productivity, and for effective utilization of materials and dairy services. They were also agreed that dairy society enables the members to develop professional skills in dairying, they are providing various financial supports, and to improve their saving habit from dairying. They opined low empowerment to the participation level in dairy development projects. So, the societies need to help their members to participate actively in the dairy development projects.

5.4.2 Social empowerment of dairy farmers

The members strongly agreed that society permits the members to fight against misconceptions related to dairying. Further, they agreed that the society empowers the members to attain the goal of social freedom, for improving their social status, for upgraded social relations., for improving social responsibility, to work with social equality. They were opined moderately high for the support for involvement in social

service and low for the fight against human rights violations. So, the societies must provide supports to the members to participate in social service activities and to fight against human rights violations.

5.4.3 Psychological empowerment of dairy farmers

The members were strongly agreed that the society empowers the members to raise the confidence about the capacity to do their work, to increase the involvement and to acquire more ideas about dairying, to reduce the stress level of members related to dairying, and to improve the risk-taking capacity. The farmers also agreed that the society helped to expand the decision-making capacity of members. But the farmers don't have any opinion towards the support provided by the society to improve their perception level. In general, the interpretation was measured as "High".

5.4.4 Political empowerment of dairy farmers

The respondents marked a low level of empowerment towards all statements such as the leadership development opportunities, participation in party elections, and demanding their rights and privileges of members and support in managing the political crisis. The findings show that there was no political empowerment happened among the members through the selected dairy co-operatives.

5.4.5 Economic motivation of dairy farmers

The respondents opined positively for all the statements. So, the result proved that the dairy farmer should work towards larger yields and economic profit, the successful dairy farmer is the one who makes the most profit, and the dairy farmer should try new dairying ideas to earn more money.

5.4.6 Risk orientation of dairy farmers

The respondents opined positively to all the statements. The findings agreed that trying a new technology involves high risk, but it is worth it, it is good for a dairy farmer to take the risk when there is a possibility of success, and a dairy farmer who is willing to take greater risk usually does better.

5.5 Problems faced by dairy farmers

5.5.1 Problems related to milk production

The climatic issues were the major problems in milk production. The climatic variation was the major factor behind the milk production problems. Because the highest temperature in Kerala was always marked in the Palakkad district.

5.5.2 Problems related to milk procurement

None of the dairy farmers were facing difficulties in milk procurement. All of them were satisfied with the procurement facilities and arrangements.

5.5.3 Other problems

It includes non-availability of labour, delayed payments from DCS, low productivity of cattle, lack of crossbreed animals, lack of sufficient veterinary services. Out of these, low accessibility to veterinary services and lack of sufficient labour were the main problems faced by the selected dairy farmers. So, it was a benefit for the dairy farmer to manage the financial and farm requirements.

5.5.4 Pre and post-flood effect in milk production and procurement

Out of 200 dairy farmers, none of them were affected by the flood of 2018 and 2019.

5.5.5 Impact of COVID 19 in dairy farmers

The quantity of milk procured by the dairy co-operative society, transportation, profit from the sale of milk, and labour services was mainly affected due to COVID 19 pandemic. The availability of labour services was very less due to lockdowns. And the Milma has stopped the milk procurement for two days. It leads to the wastage of large quantities of milk and a decrease in income from milk sales. The availability of veterinary services and food stock were moderately affected due to COVID 19 pandemic. The milk production, dairy farm structure, animal strength, and local milk sales were not affected by COVID 19.

5.5.6 Constraints experienced by farmers in availing schemes and support from dairy co-operatives and Government policies

The procedural delay time to avail benefits, slow responses, was the major difficulties faced by the dairy farmer. Lack of knowledge about banking services and functions related to subsidies was also one of the problems that exist among them. So, the government and dairy co-operative societies must evaluate the loopholes of all schemes and take necessary actions to solve these problems.

5.6 Suggestions

a) To increase the participation of youth in dairy co-operatives, it is necessary to incorporate the importance of dairy co-operatives in the education system.
b) To ensure the participation of women in the dairy co-operatives, awareness programmes and trainings can be imparted through SHG groups in local area.
c) Since there is no proper dairy related adviser with professional qualification, the union may resume the veterinary health care measures.
d) Proper training may be given to the board of directors for understanding the complexity of co-operative management and to guide the paid employees.

5.7 Conclusion

The performance of four selected dairy co-operative societies is evaluated based on the profile of selected dairy co-operatives, farmer member participation, financial indicators, structural factors, managerial factors and legal, political and technological factors. From the study, Moolathara DCS was found to be the best performing society because the membership, financial factors, and milk procurement quantity was more and the employees and members were satisfied with the activities of society. The final result reveals that the Attappadi DCS was not performing well because the milk procurement quantity was less and also the members and the employees were not satisfied with the performance of Board. The Kunnamkattupathy and Menonpara DCS had no significant problems during the study period.

The second objective was to evaluate the services offered to the dairy farmers through the dairy co-operative societies. The schemes were categorized into production enhancement services, schemes offered during COVID-19, and dairy farmer welfare

schemes. The evaluation of schemes indicates the effective utilization of funds for the upliftment of dairy farmers. The detailed assessment of services is explained in the next session.

The third objective evaluated the effectiveness of schemes and services offered through the dairy co-operatives. The dairy farmers were positively responded to the effectiveness of the all schemes except the schemes and support during COVID-19. Because the distribution of COVID related scheme is still ongoing. So, the proper evaluation is not possible during this period.

The fourth objective is to evaluate the Empowerment of member farmers. The respondents positively opined on the economic, social, and psychological empowerment achieved through the dairy co-operatives. Political empowerment was not attained by the respondents through the dairy co-operatives. The following segment deals with the next objective i.e., problems faced by the dairy farmers.

The fifth objective is to evaluate the problems faced by the dairy farmers in dairying. None of the farmers were faced the problems related to milk procurement. It indicated the effective milk procurement methods adopted by the dairy co-operative societies. But the problems related to milk production, COVID-19, availing services were the existing among the dairying. These problems were affecting the growth of dairying.

The dairy sector is very important as any other sector. Because it plays a crucial role in the development of our nation. The dairy farmers as well as the dairy co-operatives are essential for the existence of dairy sector. So, we can make dairy development possible through the collective upliftment of dairy farmers and also the dairy co-operatives.

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APPENDICES

Appendix-I

KERALA AGRICULTURAL UNIVERSITY

COLLEGE OF CO-OPERATION, BANKING AND MANAGEMENT

TOPIC: Institutional Intervention by Dairy Co-operatives in Palakkad District

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DETAILS OF INSTITUTION

I. PROFILE OF THE SOCIETY

1. Name of the society :
2. Address of the society :
3. Registration number :
4. Date of registration :
5. Date of starting :
6. Area of operation :
7. Number of Sub Centres for milk collection
8. What are the factors contributed to start the society?
9. Objectives of the co-operative society
10. Functions of the co-operative society
11. Audit classification of the society
12. Achievements/ Awards of society and members:

II. MEMBERSHIP DETAILS

1. Details of membership from 2010-11 to 2019-20:

Year	A	B	C	Total
2010-11				
2011-12				
2012-13				
2013-14				
2014-15				
2015-16				
2016-17				
2017-18				

2018-19				
2019-20				

Year	Milk supplying members		Non-supplying members		Total
	M	F	M	F	
2010-11					
2011-12					
2012-13					
2013-14					
2014-15					
2015-16					
2016-17					
2017-18					
2018-19					
2019-20					

2. Eligibility for membership
3. Classification of members
4. Rights and privileges of the members
5. Duties of members
6. Criteria for active member

III. MANAGEMENT DETAILS

1. Organizational structure of the society
2. Number of board of directors

Year	Number of Board of Directors								
	Male				Female				Total
	General	SC	ST	OBC	General	SC	ST	OBC	
2010-11									
2011-12									
2012-13									

2013-14									
2014-15									
2015-16									
2016-17									
2017-18									
2018-19									
2019-20									

3. Functions of board of directors

4. Number of employees

Sl. No.	Designation	Salary	Salary scale	Qualification

5. Duties and responsibilities of elected management and paid employees

6. When was the last General Body Meeting held?

IV. INFRASTRUCTURAL AND TECHNOLOGICAL DETAILS

1. Methods and equipments used for testing and grading of milk?

2. Details of infrastructure facilities of society:

Sl. No.	Item	Description	Quantity
1.	Land		
2.	Building		
3.	Computer		
4.	Dish and vessels		
5.	Furniture and fittings		
6.	Testing machines		
7.	Vehicles		
8.	Others (if any)		

3. Explain the procedure from milk Procurement to milk sale (Observation)

V. FINANCIAL DETAILS

1. Source of funds (Amt in Rupees)

Year	Share Capital	Reserve	Deposits	Total	Grants & Aids
2010-11					
2011-12					
2012-13					
2013-14					
2014-15					
2015-16					
2016-17					
2017-18					
2018-19					
2019-20					

2. Profit / loss for the last 10 years

Year	Gross profit	Net profit / Loss	Accumulated Loss (if any)
2010-11			
2011-12			
2012-13			
2013-14			
2014-15			
2015-16			
2016-17			
2017-18			
2018-19			
2019-20			

VI. DETAILS OF BUSINESS ACTIVITIES

1. Procurement of milk for the last 10 years

Year	Quantity (in litres)	Value (Rs.)	Average Price per litre
2010-11			
2011-12			
2012-13			
2013-14			
2014-15			
2015-16			
2016-17			
2017-18			
2018-19			
2019-20			

2. Sale of milk for the last 10 years

Year	Local sale			Sample sale			Supply to dairy plant		
	Quantity (litres)	Price/ litre	Amount (Rs.)	Quantity (litres)	Price/ litre	Amount (Rs.)	Quantity (litres)	price/ litre	Amount (Rs.)
2010-11									
2011-12									
2012-13									
2013-14									
2014-15									
2015-16									
2016-17									
2017-18									
2018-19									
2019-20									

3. Details of books/records maintained by society:

Sl. No.	Type of Records	Purpose

4. Details of Institutional linkages

Sl. No.	Institutions	Purpose

VII. SCHEMS AND SERVICES OF SOCIETY

1. Whether any grants are provided to the members? Yes [ ] No [ ]
2. If yes, what are they?
3. Other services provided by the society to members

Sl. No.	Services from Dairy co-operative society	Purpose
a) Production enhancement services		
1	Cattle feed Distribution Service	
2	Distribution of Fodder Seeds	
3	Assistance to fodder Irrigation Scheme	
4	Assistance to purchase Chaff cutter	
5	Contingency fund Scheme	
6	Assistance to purchase of milking machine	
7	Assistance for construction of cattle shed	
c) <u>Schemes and support from dairy co-operatives during flood, Covid-19</u>		
1	Distribution of cattle feed at subsidized rate	
2	Distribution of green grass and dried feed to dairy farmers at the subsidized rate	
3	Distribution of cattle feeding supplement	
4	COVID-19 relief fund	

Dairy farmer welfare schemes		
1	Dairy Farmer pension	
2	Dairy safety plan	
3	Financial assistance for education	
4	Marriage financial assistance	

Sl. No.	Name of Scheme/Service	Target Amount/ Quantity	Number of Users	Utilized Amount/ Quantity	Percentage of utilization
Production enhancement services					
1	Cattle feed scheme				
2	Distribution of Fodder Seeds				
3	Assistance to fodder Irrigation Scheme				
4	Assistance to purchase Chaff cutter				
5	Contingency fund Scheme				
6	Assistance to purchase of milking machine				
7	Assistance for construction of cattle shed				
Schemes and support from dairy co-operatives during flood, Covid-19					
1	Distribution of cattle feed At subsidized rate (Ongoing)				
2	Distribution of green grass and dried feed to dairy farmers at subsidized rate (Ongoing)				
3	Distribution of cattle feeding supplement (Ongoing)				
4	COVID 19 relief fund				

Dairy farmer welfare schemes					
1	Dairy Farmer pension				
2	Dairy safety plan				
3	Financial assistance for education				
4	Marriage financial assistance				

4. What services the society or the government renders to the retired dairy farmers?

5. What are the insurance facilities provided to the cattle?

6. What are the waste disposing methods of society?

VII. PROBLEMS OF THE SOCIETY

1. Problems faced during the period of COVID-19:

2. Support to overcome the difficulties during Covid-19:

3. Other problem faced by the society

   a) Members related

   b) Management related

   c) Technology related

   d) Finance related

   e) Other (If any)

- ✓ What are your suggestions for improving the performance of the society and enhancing dairy farming in the locality?

Appendix-II

KERALA AGRICULTURAL UNIVERSITY

COLLEGE OF CO-OPERATION, BANKING AND MANAGEMENT

TOPIC: Institutional Intervention by Dairy Co-operatives in Palakkad District

---

INTERVIEW SCHEDULE FOR BOARD OF DIRECTORS

1. SOCIO-ECONOMIC PROFILE OF BOARD OF DIRECTORS

1. Name (Optional) :
2. Age :
3. Gender : Male / Female / Transgender
4. Religion : Hindu / Muslim / Christian/Others
5. Caste : SC / ST / OBC / General
6. Marital status :Married/Unmarried / Widow/Widower/Divorcee
7. Education : Illiterate / Primary / High school / UG / Others
8. Employment status: : Self-employed /Unemployed/Salaried
9. If Self-employed : Agriculture / Service / Business / Others
10. If salaried : Government/ Private / Agricultural Labourers / Non-agricultural Labourers
11. No. of family members : 2/ 3/ 4 / 5 and above
12. No. of earning members : 0 / 1 / 2 / 3 and above
13. Monthly income of family : < 10000 / 10000-15000 / 15000-20000 / 20000-25000 / > 25000
14. No. of years as executive committee member : Below 10 years / 11-20 years / 21-30 years
15. Are you a member of any other society? : Yes/No
16. If 'Yes', how many? : 2/3/4 and above
17. Mention the names of societies :
18. Are you a member of

a) Political party : Yes/No

b) Local administration : Yes/No

c) Voluntary organisation : Yes/No

d) Religious organisation : Yes/No

e) Others (Specify) :Yes/No _____

2.PROBLEMS FACED BY THE SOCIETY

Sl. No	**Managerial problems**	**SA**	**A**	**NU**	**DA**	**SDA**
	a) Related with executive committee meeting					
1.	Executive committee meetings are not conducted regularly					
2.	Notice of executive committee meetings are not received in time					
3.	Agenda for the executive committee meetings not intimated in advance					
4.	Documents/information for discussions in executive committee meetings not circulated in advance					
5.	Executive committee meetings usually resorted to ad hoc decisions					
6.	Executive committee meetings were suspended due to insufficient quorum					
7.	Executive committee meetings were conducted even without quorum in exceptional cases					
8.	Executive committee meetings were inconclusive of agenda of meetings					
9.	Rarely involved in day-to-day managerial issues of the society					
10.	Rarely monitor the implementation of decisions of the executive committee meeting					
Sl. No.	**b) Related to General body**	**SA**	**A**	**NU**	**DA**	**SDA**
1.	GB meetings are not conducted regularly					
2.	Failed to circulate GB notice in time					
3.	Agenda for the GB meetings are not intimated in advance					
4.	Documents/information for deliberations in GB meetings are not circulated in advance					

5.	Occasional attendance in GB meetings					
6.	Rare involvement in discussions in the GB meetings					
7.	GB meetings usually resorted to making necessary decisions					
8.	GB meetings were suspended due to insufficient quorum					
9.	GB meetings were conducted even without quorum in exceptional cases					
10.	Delay in implementing decisions of GB					
Sl. No	**c) Related to audit**	**SA**	**A**	**NU**	**DA**	**SDA**
1.	Delay in conducting the annual audit					
2.	Delay in the rectification of audit defects					
3.	Down gradation of audit classification of the society					
4.	The inquiry was ordered based on Audit reports/other reasons					
Sl. No	**Structural problems**	**SA**	**A**	**NU**	**DA**	**SDA**
1.	Unethical and poor management practices					
2.	Lack of modern management techniques					
3.	Administration of society is not based on a set of rules					
4.	The predominance of the vested interest of a particular person or class					
5.	Absence of regular performance appraisal of employees					
Sl. No	**Functional problems**	**SA**	**A**	**NU**	**DA**	**SDA**
	a) Problems related to milk procurement perceived by board of directors					
1.	There are no proper adulteration detection mechanisms.					
2.	Procurement quantity gets reduced due to the lack of transportation facilities.					
3.	The middleman is engaged between milk producers and society.					

4.	Milk producers are not properly maintaining hygiene while bringing milk to society.					
5.	The staff of the society is completing the records not on time and regular basis.					
6.	Various activities and steps are not undertaken for the cleanliness of utensils, staff, equipment, and building emphasizing procurement of clean milk.					
7.	Society not properly checks the quality of milk testing equipment and other accessories.					
8.	The absence of trained Artificial Insemination (AI) and Veterinary First Aid (VFA) workers in the societies.					
	c) Problems related to marketing perceived by board of directors					
1.	The society has not installed bulk cooler facilities for chilling the milk					
2.	The milk price is not decided based on the price policies of the milk union.					
3.	The managing committee is not authorized to fix the quantity and price of milk to be marketed locally.					
4.	After conducting the quality test for all the samples, the remaining sample milk is not properly stored for sale.					
5.	Society, at the end of the year, doesn't pay dividends accurately.					
6.	Society facing difficulties in transportation milk to the consumers.					
Sl. No	**Political issues as perceived by the board of directors**	**SA**	**A**	**NU**	**DA**	**SDA**
1.	Over politicization in the dairy co-operative society.					
2.	The predominance of the vested interest of a particular person's political view					
3.	The election of executive committee members is influenced by the politics existing in the locality					
4.	Heavy dependency on government capital rather than society's profit					

5.	Marketing is influenced by the interests of political leaders in the locality.					
Sl. No	**Legal issues as perceived by the board of directors**	**SA**	**A**	**NU**	**DA**	**SDA**
1.	Corruption in the dairy co-operative society.					
2.	Election of office bearers not conducted at the annual general body as per rules					
3.	Audited accounts and annual performance reports are not submitted to the annual general body					
4.	Enrolment of members to the society not as per act and rules					
5.	Annual budget and performance reports are not scrutinized in the GB					
6.	Expenditure for the day-to-day functions not as per the approved budget					
7.	Monthly accounts of receipts and payments are not approved at the monthly executive committee meeting					
8.	Neglects tri-monthly& annual stock verification					
9.	Annual fee collections are used for the day-to-day expenditure of the society					

(SA- Strongly Agree, A– Agree, NU- Neutral, DA– Disagree, SDA - Strongly Disagree)

✓ What are your suggestions for improving the performance of the society and enhancing dairy farming in the locality?

Appendix-III

KERALA AGRICULTURAL UNIVERSITY

COLLEGE OF CO-OPERATION, BANKING AND MANAGEMENT

TOPIC: Institutional Intervention by Dairy Co-operatives in Palakkad District

---

INTERVIEW SCHEDULE FOR EMPLOYEES

I. SOCIO-ECONOMIC PROFILE OF EMPLOYEES

1. Name (Optional) :
2. Age :
3. Gender : Male / Female / Transgender
4. Religion : Hindu / Muslim / Christian
5. Caste : SC / ST / OBC / OEC / General
6. Marital status : Married / Unmarried / Widow / Widower / Divorcee
7. Education : School / Degree / Post Graduate / Other, _____
8. Name of the dairy co-operative Society :
9. Designation :
10. Duties and responsibilities :a)
11. Years of experience :Below 10 years / 11-20 years / 21-30 years
12. Monthly Income :

II. HUMAN RESOURCE RELATED PROBLEMS OF THE SOCIETY

Sl. No.	Statements	SA	A	NU	DA	SDA
1	There is a lack of professional skills among the employees of the society.					
2	Staff scarcity and employee overburden are persisting in society.					
3	Most of the employees are over-aged employees.					
4	The lack of proper employee training programmes affects the work productivity of employees.					

5	The absence of good work culture & commitment affects the work yield of employees.					
6	There is no significant hike in the salary.					
7	Society is not conducting adequate performance appraisals for employees.					
8	There are poor interpersonal relations among the employees.					
9	The employees are working lazily.					
10	The stress level of staff is more in society.					
11	There is a lack of proper equipment and facilities for employees.					
12	Society is not conducting a proper periodical job performance review of employees.					
13	There is a lack of motivation for employees.					
14	The employees are facing difficulties due to extended working hours.					
15	Employee discrimination is prevailing in society.					

(SA-Strongly Agree, A- Agree, NU-Neutral, DA-Disagree, SDA-Strongly disagree)

III. JOB SATISFACTION LEVEL OF EMPLOYEES

Sl. N	Statements	SA	A	NU	DA	SDA
1	The management doesn't encourage and recognizes new ideas.					
2	Employees are not satisfied with the opportunities for growth within the organization.					
3	Employees are not satisfied with their services.					
4	Employees are not satisfied with the services of the organization.					
5	The customers are not treated with respect by staff.					
6	The employees are lazy to complete a task.					
7	The employees are ignoring constructive suggestions or criticism.					
8	Employees are not satisfied with how the organization addresses external issues which impacting the services.					
9	Employees are not satisfied with how the organization addresses internal issues which impacting the services.					

10	The organizational lines of communication flow irregularly.					
11	The supervisor would not respond appropriately related to the problems of employees.					
12	Employees are not satisfied with the level and amount of compensation they receive.					
13	The supervisor didn't provide resources to improve the work of employees.					
14	The supervisor didn't encourage high achievement by reducing the fear of failure.					
15	Employees didn't receive fair and honest performance evaluations.					
16	Employees didn't believe that they receive the recognition for their contribution.					
17	Employees are not satisfied with the amount of training I receive to do my job.					
18	The work environment is not comfortable and inadequate to the needs of the program/department.					
19	The employees didn't utilize appropriate problem-solving skills.					
20	The salary is less to similar organizations providing similar services.					

(SA-Strongly Agree, A- Agree, NU-Neutral, DA-Disagree, SDA-Strongly disagree)

IV. CO-OPERATIVE GOVERNANCE

Sl. N	Statements	SA	A	NU	DA	SDA
1	The board of directors is not properly guiding employees.					
2	The boards of directors didn't listen and respond to the views of employees.					
3	Boards of directors don't have sufficient knowledge and experience to provide direction for employees.					
4	The board members are not fair and honest in their dealings with members.					
5	The board of directors is not actively participating in all activities of the co-operative society.					

6	They are not maintaining good and healthy relationships between employees and board members.					

Appendix-IV

KERALA AGRICULTURAL UNIVERSITY

COLLEGE OF CO-OPERATION, BANKING AND MANAGEMENT

TOPIC: Institutional Intervention by Dairy Co-operatives in Palakkad District

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INTERVIEW SCHEDULE FOR RESPONDENTS

Respondent No.
Date:

I. GENERAL INFORMATION

1. Name and Address of the respondent (Milk Producer) :
2. Contact Number (Mobile/Land line Number) :
3. Sex : Male [ ] Female [ ] Transgender [ ]
4. Age (in years) : ----------Years
5. Education :
6. Marital Status : Married [ ] Unmarried [ ] Widow/ Widower [ ] Divorcee [ ]
7. Social Class : SC [ ] ST [ ] OBC [ ] General [ ]
8. Religion : Hindu [ ] Muslim [ ] Christian [ ] Others [ ]
9. Type of Family : Joint [ ] Nuclear [ ]
10. Size of Family:

Sl. No.	Name	Relation	Sex	Age	Education	Occupation		Income per Month (Rs.)	
						Main	Subsidiary	Main	Subsidiary
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									

11. Possession of house : Owned [ ] Rent [ ]
12. Type of house : Thatched [ ] Tiled [ ] Terraced [ ]

13. Material Possession :

Sl. No.	Items	Possession Status (Yes/No)
1	Fridge	
2	TV	
3	Cooking Gas (LPG, Biogas, etc.)	
4	Cycle	
5	Two Wheelers	
6	Four-Wheeler	
7	Washing Machine	
8	Mobile Phone	
9	Computer	
10	Air Conditioner	
11	Others (Specify) a)	

14. Asset Details :

Sl. No.	Type of Assets	Value (Rs.)	Annual asset Income (Rs.)
A. Physical Assets			
1	Land		
2	Building		
3	Machinery		
B. Financial Assets			
1	Deposits		
2	Investments		
3			

15. Monthly Expenditure :

Sl. No	Expenditure per month (Excluding Dairying)	Amount
1	Food	
2	House	
3	Cloths	
4	Medical Purpose	
5	Education	
6	Repayments	
Total expenditure		
Monthly income		
Surplus/Deficit		

16. If surplus, Amount of savings : Rs.

17. If deficit, details of borrowings :

Sl. No.	Source of borrowings	Amount	Interest Rate	Term of payment	Amount out standing

18. Land holding : Owned-----/Leased in-----/Leased out-----

19. Land use pattern :

Sl. No.	Pattern	Area
1	Irrigated Land	
2	Dry Land	
3	Area used for dairying	
4	Cultivable area **Crops** a) b)	
5	Uncultivable area	
6	Area used for fodder cultivation	
7	**Type of fodder** a) b)	

20. Economic motivation

(Please give your opinion about following statements)

Sl. No.	Statement	SA	A	NU	DA	SDA
1	A dairy farmer should work towards larger yields and economic profit.					
2	The most successful dairy farmer is the one who makes the most profit.					
3	A dairy farmer should try any new dairying idea which may help him to earn more money.					

(SA=Strongly Agree, A=Agree, NU= Neutral, DA=Disagree, SDA=Strongly Disagree)

21. Risk orientation

(Please give your opinion about following statements)

Sl. No.	Statement	SA	A	NU	DA	SDA
1	Trying entirely a new technology involves high risk, but it is worthy.					

2	It is good to a dairy farmer to take risk when there is a possibility that the change will give a high level of success.						
3	A dairy farmer who is willing to take greater risk than the average dairy farmer usually does better.						

(SA=Strongly Agree, A=Agree, NU= Neutral, DA=Disagree, SDA=Strongly Disagree)

22. Contact with extension agencies:

Sl. No.	**Name of extension agent/agency**	**Purpose**	**Frequency of contact**					
			Two or more times a week	**Once in a week**	**Once in a fortnight**	**Once in a month**	**Rarely**	**Never**
1	Veterinary Hospital							
2	Dairy Development Department							
3	Milma							
4	Kerala Agricultural University (KAU) Scientist							
5	Kerala Veterinary and Animal Science University (KVASU) Scientist							
6	Krishi Vigyan Kendra (KVK)							
7	Agricultural Research Stations							
8	Non-Governmental Organisation (NGO)							

23. Social participation

Sl. No.	Name of organisation	Purpose	Status		Frequency of participation		
			Member	Office Bearer	Attend all meetings	Attended some meetings	Never attended any meetings
1	Panchayat						
2	Co-operative societies						
3	Kudumbashree						
4	Farmers clubs						
5	Discussion groups						

II.DAIRY FARMING

A. Membership Details

1. Experience in Dairy farming : ----------Years
2. Is dairying primary or secondary occupation : a) Primary [ ]
   b) Secondary [ ]
3. If secondary, what is your primary occupation? :
4. Reason for choosing dairy as secondary occupation :
5. Explain the type of family support towards dairy farming :
6. How much time will be spent by family in a day for dairy farming :
7. Reason for practising Dairying : a) Hereditary Occupation [ ]
   b) Less capital investment [ ]
   c) The only work known [ ]
   d) Non availability of other employments
   d) Others (specify)
8. Method of milking
   a) Physical : Yes / No
   b) Mechanical : Yes / No

9. If Physical,

Sl. No.	Nature of employee	Working hours per day	Wage per day
1	Family member		
2	Hired employee		

10. If Mechanical,

Sl. No.	Number of machines	Price	Owned/Hired	Brand of machine	Working Capacity

11. Number of cattle in initial stage :

Sl. No.	Breed	Number	Source of Purchase

12. Name of dairy co-operative society :
13. Type of membership :
14. Membership duration : ---------Years
15. Subscription if any :
16. Are you a member of any other society? : Yes / No
17. If 'Yes', how many? : 2/3/4 and above

18. Mention the names of societies :
19. Have you been a member of any other dairy co-operative society? Yes/ No
20. If Yes, Previous membership details :a) Name of society –
b) Type of membership –
c) Membership Duration –
21. Reason for cancelling the previous membership :

B. Animal Wealth Details

1. Details of cattle :

Species		Category			Breed	Age	Source of purchase	Milk yield (per day)		Total Milk Quantity (Litre /per day)
		Milch	Dry	Young				Morning	After noon	
Cow	1) 2) 3) 4) 5) 6)									
Buffalo	1) 2) 3) 4) 5) 6)									
Total										

2. Details of Milk sales :

Sales to dairy co-operatives society		Other Sales		Own consumption
Quantity of milk supply (litre Per day)	**Frequency of Payments (Weekly/Monthly)**	**Quantity of milk supply (litre Per day)**	**Frequency of Payments (Weekly/Monthly)**	**Quantity of milk consumption (litre Per day)**
Price per litre:		**Price per litre:**		**Price per litre:**

3. Feeding practices adopted

Sl. No.	Feed Used	Quantity of roughage feed per day			Quantity of concentrate feed per day	Proportion of concentrates and roughages in your feed	Cost per day
		Green Grass	Straw	Others if any			

a) Whether you have fodder cultivable area of your own? : Yes/ No

b) If yes, Fodder details

Type of Fodder	Type of land (Own/Lease)	Area of cultivation	Source of planting material	Cost of planting material	Harvest period

4. Common health issues faced in cattle farming

Sl. No	Disease	Reason	Precaution	Treatment

C. Economics of dairy farming

1. Type of dairy shed : Thatched [ ] Tiled [ ] Terraced [ ]
2. Number of dairy sheds :
3. Total investment in dairy Shed :
4. Employment generation :

a) No. of persons employed under Dairying
Family members :
Hired :
b) Time spent for dairying per day
Family members :
Hired :
5. Modern technologies adopted in dairy shed :
6. Source of fund for constructing dairy shed :

Sl. No.	Source	Amount of credit	Interest Rate	Term of payment	Amount out standing

7. Support received from dairy co-operative society :
8. Source of technical guidance :
9. Source of fund for purchasing cattle :

Sl. No.	Source	Amount of credit	Interest Rate	Term of payment	Amount out standing

10. Income and Expenditure from dairying

Sl. No.	Monthly Income and Expenditure Pattern	Amount
Income		
1	Sale of milk	
2	Other Sources a) Sale of cow dung b) Sale of cow urine b) Sale of cattle, Calves c)	
3	Gobar gas plant (Fuel generated out of it-Savings in fuel)	
4	Value added products From milk, a) Curd b) Ghee c)	
Total Income		
Expenditure		
1	Feed cost	
2	Labour cost	
3	Veterinary cost	

1	Feed cost	
2	Labour cost	
3	Veterinary cost	
4	Fodder production cost	
5	Transportation cost	
6	Miscellaneous cost	
7	Interest expenses	
8	Insurance	
9	Other expenses if any…….	
Total Expenditure		
Net Profit		

11If deficit, reason for dairy in loss :

12. What are the loss recovering strategies :

13. Opinion of the respondents towards the performance of the society.

Sl. No	**Managerial Factors**	**SA**	**A**	**NU**	**DA**	**SDA**
a) Related to General body						
1	GB meetings are not conducted regularly					
2	Failed to circulate GB notice in time					
3	Agenda for the GB meetings are not intimated in advance					
4.	Documents/information for deliberations in GB meetings are not circulated in advance					
5.	Occasional attendance in GB meetings					
6.	Rare involvement in discussions in the GB meetings					
7.	GB meetings usually resorted to making necessary decisions					
8.	GB meetings were suspended due to insufficient quorum					
9.	GB meetings were conducted even without quorum in exceptional cases					
10.	Delay in implementing decisions of GB					
Sl. No	**Structural Factors**	**SA**	**A**	**NU**	**DA**	**SDA**
1	Unethical and poor management practices					
2	Lack of modern management techniques					
3.	Administration of society is not based on a set of rules					
4	The predominance of the vested interest of a particular person or class					
5	Absence of regular performance appraisal of employees					
Sl. No	**Functional Factors**	**SA**	**A**	**NU**	**DA**	**SDA**
	a) Milk Procurement					
1.	There are no proper adulteration detection mechanisms.					

2	Procurement quantity gets reduced due to the lack of transportation facilities.					
3	The middleman is engaged between milk producers and society.					
4	Milk producers are not properly maintaining hygiene while bringing milk to society.					
5	The staff of the society is completing the records not on time and regular basis.					
6	Various activities and steps are not undertaken for the cleanliness of utensils, staff, equipment, and building emphasizing procurement of clean milk.					
7	Society not properly checks the quality of milk testing equipment and other accessories.					
8	The absence of trained Artificial Insemination (AI) and Veterinary First Aid (VFA) workers in the societies.					
Sl. No	**b) Milk Marketing**	**SA**	**A**	**NU**	**DA**	**SDA**
1.	The society has not installed bulk cooler facilities for chilling the milk					
2.	The milk price is not decided based on the price policies of the milk union.					
3.	The managing committee is not authorized to fix the quantity and price of milk to be marketed locally.					
4.	After conducting the quality test for all the samples, the remaining sample milk is not properly stored for sale.					
5.	Society, at the end of the year, doesn't pay dividends accurately.					
6.	Society facing difficulties in transportation milk to the consumers.					
Sl. No	**Political Factors**	**SA**	**A**	**NU**	**DA**	**SDA**
1	Over politicization in the dairy co-operative society.					
2	The predominance of the vested interest of a particular person's political view					
3.	The election of executive committee members is influenced by the politics existing in the locality					
4.	Heavy dependency on government capital rather than society's profit					
5	Marketing is influenced by the interests of political leaders in the locality.					
Sl. No	**Legal Factors**	**SA**	**A**	**NU**	**DA**	**SDA**
1	Corruption in the dairy co-operative society.					

2	Election of office bearers not conducted at the annual general body as per rules					
3	Audited accounts and annual performance reports are not submitted to the annual general body					
4.	Enrolment of members to the society not as per act and rules					
5.	Annual budget and performance reports are not scrutinized in the GB					
6	Expenditure for the day-to-day functions not as per the approved budget					
7	Monthly accounts of receipts and payments are not approved at the monthly executive committee meeting					
8.	Neglects tri-monthly& annual stock verification					
9.	Annual fee collections are used for the day-today expenditure of the society					

III. UTILIZATION OF SERVICES

a) Awareness level about services

Sl. No.	Services from Dairy co-operative society	Awareness level				
		Fully Aware	**Aware**	**Neither Aware or Not aware**	**Not Aware**	**Fully not Aware**
a) Production enhancement services						
1	Cattle feed Distribution Service					
2	Distribution of Fodder Seeds					
3	Assistance to fodder Irrigation Scheme					
4	Assistance to purchase Chaff cutter					
5	Contingency fund Scheme					
6	Assistance to purchase of milking machine					
7	Assistance for construction of cattle shed					
b) Schemes and support from dairy co-operatives during Covid-19.						
1	Distribution of cattle feed at subsidized rate					

2	Distribution of green grass and dried feed to dairy farmers at the subsidized rate					
3	Distribution of cattle feeding supplement					
4	COVID-19 relief fund					
c) Dairy farmer welfare schemes						
1	Dairy Farmer pension					
2	Dairy safety plan					
3	Financial assistance for education					
4	Marriage financial assistance					

b) Frequency of Participation

Sl. No.	**Services from Dairy co-operative society**	**Frequency level**				
		Very Frequently	**Frequently**	**Occasionally**	**Rarely**	**Never**
a) Production enhancement services						
1	Cattle feed Distribution Service					
2	Distribution of Fodder Seeds					
3	Assistance to fodder Irrigation Scheme					
4	Assistance to purchase Chaff cutter					
5	Contingency fund Scheme					
6	Assistance to purchase of milking machine					
7	Assistance for construction of cattle shed					

b) Schemes and support from dairy co-operatives during Covid-19.						
1	Distribution of cattle feed at subsidized rate					
2	Distribution of green grass and dried feed to dairy farmers at the subsidized rate					
3	Distribution of cattle feeding supplement					
4	COVID-19 relief fund					
c) Dairy farmer welfare schemes						
1	Dairy Farmer pension					
2	Dairy safety plan					
3	Financial assistance for education					
4	Marriage financial assistance					

c) Level of utilisation

Sl. No.	**Services from Dairy co-operative society**	**Level of utilisation**				
		Very much Satisfied	**Satisfied**	**Neutral**	**Unsatisfied**	**Very much Unsatisfied**
a) Production enhancement services						
1	Cattle feed Distribution Service					
2	Distribution of Fodder Seeds					

3	Assistance to fodder Irrigation Scheme					
4	Assistance to purchase Chaff cutter					
5	Contingency fund Scheme					
6	Assistance to purchase of milking machine					
7	Assistance for construction of cattle shed					
b) Schemes and support from dairy co-operatives during Covid-19.						
1	Distribution of cattle feed at subsidized rate					
2	Distribution of green grass and dried feed to dairy farmers at the subsidized rate					
3	Distribution of cattle feeding supplement					
4	COVID-19 relief fund					
c) Dairy farmer welfare schemes						
1	Dairy Farmer pension					
2	Dairy safety plan					
3	Financial assistance for education					
4	Marriage financial assistance					

d) Effectiveness of services

Sl. No.	Services from Dairy co-operative society	Level of effectiveness				
		Very much Satisfied	Satisfied	Neutral	Unsatisfied	Very much Unsatisfied
a) Production enhancement services						
1	Cattle feed Distribution Service					
2	Distribution of Fodder Seeds					
3	Assistance to fodder Irrigation Scheme					
4	Assistance to purchase Chaff cutter					
5	Contingency fund Scheme					
6	Assistance to purchase of milking machine					
7	Assistance for construction of cattle shed					
b) Schemes and support from dairy co-operatives during Covid-19.						
1	Distribution of cattle feed at subsidized rate					
2	Distribution of green grass and dried feed to dairy farmers at the subsidized rate					
3	Distribution of cattle feeding supplement					
4	COVID-19 relief fund					
c) Dairy farmer welfare schemes						
1	Dairy Farmer pension					
2	Dairy safety plan					

3	Financial assistance for education					
4	Marriage financial assistance					

e) Information to members

Sl. No.	Statements	Very much satisfied	Satisfied	Neutral	Unsatisfied	Very much unsatisfied
1	The societies are providing information related to schemes and services on time.					
2	The societies are sharing information related to schemes and services without delay.					
3	The societies are properly communicating the financial details of the society					
4	The societies are conveying the information related to the programmes conducted by the societies.					
5	The societies are providing information related to elections without delay.					

IV. EMPOWERMENT OF DAIRY FARMERS

a) Economic Empowerment

Sl. No.	Statements	SA	A	NU	DA	SDA
1	Society encourages the members by providing various financial supports.					
2	Society enables the members to develop professional skill in dairying.					
3	Society enables the members to improve their saving ability from dairying.					
4	Society enables the members to achieve the goal of agricultural development.					
5	Society enables the members to participate actively in the dairy development projects.					
6	Society enables the members to improve farm production and productivity.					
7	Society enables the members for effective utilization of materials and dairy services.					

(SA=Strongly Agree, A=Agree, NU= Neutral, DA=Disagree, SDA=Strongly Disagree)

b) Social Empowerment

Sl. No.	Statements	SA	A	NU	DA	SDA
1	Society enables the members to achieve the goal of social freedom.					
2	Society enables the members to fight against misconceptions related to dairying.					
3	Society enables the members to actively get involved in social service.					
4	Society enables the members for improving their social status.					
5	Society enables the members for better social relations.					
6	Society enables the members for improving social responsibility**.**					
7	Society enables the members to fight against human rights violation.					
8	Society enables the members to work with social equality.					

(SA=Strongly Agree, A=Agree, NU= Neutral, DA=Disagree, SDA=Strongly Disagree)

c) Psychological empowerment

Sl. No.	Statements	SA	A	NU	DA	SDA
1	Society enables the members to increase the confidence about ability to do their work.					
2	Society motivates the members to increase the participation in dairy farming.					
3	Society helps the members to learn more about dairying.					
4	Society supporting the members to improve the risk-taking capacity.					
5	Society improves the decision-making capacity of member farmers.					
6	Society helps to reduce the stress level of members related to dairying.					
7	Society helps to improve the perception level of member farmers.					

(SA=Strongly Agree, A=Agree, NU= Neutral, DA=Disagree, SDA=Strongly Disagree)

d) Political Empowerment

Sl. No.	Statements	SA	A	NU	DA	SDA
1	Society enables the members to acquire leadership development opportunities.					
2	Society enables the members for actively participate in the political activities.					
3	Society enables the members to manage political crisis.					
4	Society enables the members to participate actively in elections.					
5	Society enables the members to demand their rights and privileges.					

(SA=Strongly Agree, A=Agree, NU= Neutral, DA=Disagree, SDA=Strongly Disagree)

V. PROBLEMS FACED BY DAIRY FARMER

a) Problems related to milk production:

Sl. No.	Problems	High	Moderate	Nil
1	The climatic variation highly affected the quantity of milk production.			
2	The cattle diseases highly affected milk production.			
3	The lack of nutrition leads to a decrease in the level of milk production			

4	The irregular milking frequency negatively affected milk production.			
5	Genetic problems are the main reason for reducing milk production.			

b) Problems related to milk procurement

Sl. No.	Problems	High	Moderate	Nil
1	The dairy farmers faced a Lack of hygienic and sanitization measures in the dairy co-operatives.			
2	The milk procurement was reduced due to a lack of transportation facility			
3	The staffs are not properly recording the milk supply details			
4	The DCS doesn't have any milk storage facilities			
5	The societies don't have a proper milk testing mechanism			

c) Other problems faced by dairy farmer

Sl. No.	Problems	High	Moderate	Nil
1	The non-availability of labour is the major problem faced by dairy farmers.			
2	The delayed payments from dairy co-operatives affect the investments in dairying.			
3	The non-availability of crossbreed animals affects the productivity of dairying.			
4	The Lack of sufficient veterinary services affected the health of cattle.			

e) Impact of COVID-19 on dairying

1. Did the COVID-19 affect the dairying? : Yes / No
2. If yes, how it affected? :
3. Did you get any help to overcome the crisis caused by COVID-19? : Yes / No
4. If yes, what assistance was received to overcome the crisis caused by COVID-19?

From Government:

From Co-operative Society:

5. COVID-19 effect on dairying

Sl. No.	Particulars	High	Moderate	Nil
1	The COVID 19 negatively affected milk production from dairying.			
2	The COVID lockdown affected milk transportation to DCS			
3	The COVID 19 affects the physical structure of the farm			
4	It affected the veterinary services for cattle			
5	It leads to the death of cattle			
6	It affected the local milk sale of dairy farmers.			
7	It affected the quantity of milk procured by the dairy co-operative society			
8	The Profit from the sale of milk was reduced during COVID 19 period.			
10	The availability of Labour services was reduced during COVID 19.			

f) Constraints faced in availing schemes and support from Dairy co-operative society/Government

Sl. No.	Statements	High	Moderate	Nil
1	The dairy farmers had to attend many procedures to avail the benefits.			
2	The respondents received inadequate support from the dairy co-operative society/Government.			
3	The effectiveness of the schemes was reduced due to the slow responses from the DCS and Government.			
4	The lack of knowledge about banking activities was the major problem faced by the dairy farmers to avail subsidies.			
5	The fodder seeds supplied were not of good quality.			

- ✓ Any other opinion or suggestions for improving the performance of dairy co-operative society and dairy farming.

INSTITUTIONAL INTERVENTION BY DAIRY CO-OPERATIVES IN PALAKKAD DISTRICT

By

Maria Poulose T

(2019-15-001)

ABSTRACT OF THE THESIS

Submitted in partial fulfilment of the requirement for the degree of

Master of Science in Co-operation & Banking

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Faculty of Agriculture

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ABSTRACT

Kerala currently represents the twelfth largest dairy market in India. The share of livestock in Gross State Value Added (GSVA) from the agriculture sector in Kerala is above 27 percent. The livestock population in Kerala was 38.36 lakh in the year 2020 (Economic Review Report, 2020). Dairy co-operatives are functioning to support dairy farmers in the processing and selling of milk and milk products. The common need of milk producers is to obtain a fair price for their milk and this is fulfilled through collective marketing. Milk is considered to be one of the most sensitive products under agriculture and allied sector, requiring special and timely care and this can be provided through the collective operation of dairy co-operative societies.

The present study was undertaken with the following objectives viz., to analyze the performance of selected dairy co-operatives, to evaluate the services rendered by the selected dairy co-operatives, to assess the extent of utilization of services by the member farmers, to assess the role of selected dairy co-operatives in the empowerment of member farmers, and to study the problems faced by the dairy farmers. The sample size consists of 256 (Active members-200, BOD-36, Employees 20) were selected from four dairy co-operative societies from Palakkad district namely, Moolathara Ksheerolpadaka Sahakarana Sangam Ltd. No. P 65 (D), Kunnamkattupathy Ksheerolpadaka Sahakarana Sangam Ltd. No. P 126 (D), Menonpara Ksheerolpadaka Sahakarana Sangam Ltd. No. P 281 (D) and Attappadi Ksheerolpadaka Sahakarana Sangam Ltd. No. P 558 (D).

The performance of selected dairy co-operatives was analyzed through the variables namely farmer member participation, financial indicators, structural factors, managerial factors, legal, political factors, technological factors, functional factors, human resource factors, and co-operative governance. The percentages and index methods with graphical representations were used for the study. The membership was more in Moolathara DCS and less in Menonpara DCS. The milk procurement and milk supply were more in Moolathara DCS and less in Attappadi DCS. The local milk sale was more in Menonpara DCS and less in Moolathara DCS. The farmer participation levels in dairy co-operatives were higher among the respondents. The financial indicators, structural factors, managerial factors, legal, political factors, technological

factors, functional factors, human resource factors, and co-operative governance also showed a positive result in the study. But, the absence of trained Artificial Insemination (AI) and Veterinary First Aid (VFA) workers was the major problem faced by the dairy farmers in the dairy co-operative societies.

The services offered by the selected dairy co-operative societies were evaluated by using the index method and percentage methods. The offered schemes and services are grouped into production enhancement services, Flood and COVID-19 related services, and dairy farmer welfare board services. Out of these schemes, the level of utilization was more for production enhancement services compared to other schemes. The participated dairy farmers opined positively for the effectiveness of schemes and services by the dairy co-operatives.

The empowerment of dairy farmers was analyzed by using the index method. The different types of empowerments studied were social empowerment, Economic empowerment, Psychological empowerment, and Political empowerment. The opinion towards all types of empowerments except political empowerment was higher. The political empowerment level was marked as low. It indicates less political empowerment through the dairy co-operatives.

The problems related to milk production, procurement, the impact of flood and covid-19 in dairying, and constraints in availing services and schemes were examined by using the index method. The climatic variation has highly affected the quantity of milk production. The non-availability of labor and Lack of sufficient veterinary services is the major problem faced by dairy farmers. The flood of 2018, 2019 didn't affect the dairy farmers. But COVID-19 lockdown affected milk transportation to DCS and it affected the quantity of milk procured by the dairy co-operative society. It finally leads to a decrease in profit from the sale of milk.

The study can be concluded that the performance of the dairy co-operatives shows strong farmer member participation, financial, structural, managerial, legal, political, technological, functional, and human resource factors, and co-operative governance in the dairy sector. All the services rendered by the co-operative societies were utilized by the farmers based on their requirements. By providing the services by the dairy co-operatives, they assured the economic, social, psychological empowerment except for

political empowerment. Still, the farmers were facing the problems in dairying like the absence of trained Artificial insemination and Veterinary First Aid worker to provide veterinary services, Climatic problems, and scarcity of labour.

The recommendation of the study includes the appointment of trained Artificial insemination and Veterinary First Aid worker to provide veterinary services, the conduct of awareness program for the dairy farmers related to the health problems faced by the cattle, and also conduct of awareness classes for attracting youth towards dairy farming and create labour groups by the dairy co-operatives to solve the problem of scarcity of labours.