



# A STUDY ON OPERATIONAL PERFORMANCE AND GROWTH OF MILK FEDERATION IN KARNATAKA: A TREND ANALYSIS

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## Abstract

The present study aims to analyze the performance and growth of milk federation in Karnataka state. Karnataka Cooperative Milk Producers' Federation Limited (KMF) is the apex body for the dairy co-operative movement in Karnataka. It is the second largest dairy co-operative amongst the dairy cooperatives in the country. In South India, it stands first in terms of procurement as well as sales. One of the core functions of the Federation is the marketing of Milk and Milk Products. The Brand 'Nandini' is the household name for pure and fresh milk and milk products. In Karnataka, as of 2023, there were 14 district milk unions covering all the districts of the state with 17550 dairy co-operatives registered, out of which, 15453 primary dairy co-operative societies are functioning under 16 district milk unions with an enrolment of 26 lakh milk producers under DCSs. The study focuses and majorly three major objectives are- to study the historical background and performance of KMF in Karnataka, to evaluate the trends in the growth and functioning of milk federation in Karnataka, and to analyze the DCSs, memberships, and milk production of KMF in the state.

**Index Terms - KMF, Milk Unions, DCSs, Memberships, Milk Production and Milk Sales.**

## I. INTRODUCTION

Karnataka is well known for its milk-producing cooperatives situated in almost every district of the state, and the Karnataka Milk Federation is a popular name among them. The Karnataka Milk Federation (KMF) is a federation under the ownership of the Ministry of Cooperation, Government of Karnataka. The KMF is the apex body for the dairy co-operative movement in the state of Karnataka. KMF is the second largest dairy co-operative amongst the dairy cooperatives in the country. In South India, it stands first in terms of procurement as well as sales. One of the core functions of the Federation is the marketing of Milk and Milk Products. The Brand 'Nandini' is the household name for pure and fresh milk and milk products. KMF has 16 district milk unions covering all the districts of the state which procure milk from primary Dairy Cooperative Societies (DCSs) and distribute milk to the consumers in various Towns/Cities/Rural markets in Karnataka. DCSs function at three stages in the State i.e., at the village level there are the milk producers co-operative societies, at the district level district milk unions, and at the state level the KMF. The federation offers a fair price to the rural milk producers besides catering to the requirement of the urban consumer of pure hygienic and qualitative milk, butter, ghee, peda, burfi, panner, khova, flavoured milk, etc. The functions of a DCS such as collecting milk twice a day from farmers, making regular payments to suppliers, and dispatching the milk collected to the milk union.

## II. RESEARCH OBJECTIVES OF THE STUDY

1. To study the historical background and performance of KMF in Karnataka.
2. To know the various district milk unions functioning under KMF in Karnataka state.
3. To evaluate the trends in the growth and functioning of DCSs, memberships, and milk production under KMF in the state.

## III. HYPOTHESIS OF THE STUDY

1. There is a significant increase in the growth of DCSs and milk production in Karnataka.

## IV. RESEARCH METHODOLOGY

The present study is mainly based on secondary data sources and aims to study the performance and growth of milk unions, and their role in milk procurement, dairy products, dairy units, and dairy activities in the state of Karnataka. The secondary data collected from the various annual reports and published sources of Karnataka Milk Federation (KMF), Directorate of Economics and Statistics, Karnataka, Economic Survey of Karnataka, Department of Animal Husbandry and Dairying, Sahakara Sindhu-Department of Cooperation, Registrar of Co-operation, scholarly journals, reputed articles, magazines, published and unpublished thesis and dissertation, websites, etc. This study has been regarding the functioning of DCSs and milk production in Karnataka was collected for the period from 2015-16 to 2022-23.

## V. STATISTICAL TECHNIQUES

The study used statistical tools like percentages and Compound Annual Growth Rate (CAGR) and Correlation was analyzed for DCSs, memberships, average milk production, and milk sales through excel and SPSS 21 statistical software.

## VI. HISTORY OF KARNATAKA MILK FEDERATION

The first of the dairy co-operatives that make up KMF started in 1955 in Kudige, Kodagu District. Karnataka Dairy Development Cooperation (KDDC), the first-ever World Bank/ International Development Agency-funded Dairy Development Program in the country started in Karnataka on co-operative lines with the organization of Village Level Dairy Co-operatives in 1974. The AMUL pattern of dairy co-operatives started functioning in Karnataka from 1974-75 with financial assistance from World Bank/IDA, Operation Flood II & III. The Anand Pattern three a tier organization structure – Dairy Cooperative Societies at the village level and district Milk Unions at the District level to take care of the procurement, processing, and marketing of milk and provide technical input services for enhancing milk production at producers' level and Federation at the state level to co-ordinate the growth of the sector in the State, are resolutely and harmoniously working hand-in-hand in creating self-sustaining rural economy based on cooperative dairying. KMF is one of the few federations in the country, which have converted dairying from a subsidiary occupation into an industry. Coordination of activities among the Unions and developing markets for Milk and Milk products is the responsibility of KMF. Marketing Milk in the respective jurisdiction is organized by the respective Milk Unions. The surplus/deficit of liquid milk among the member Milk Unions is monitored by the Federation. While the marketing of all the Milk Products is organized by KMF, both within and outside the State, all the Milk and Milk products are sold under a common brand name NANDINI. In 1984 the organization was renamed KMF.

## VII. PERFORMANCE OF MILK FEDERATION IN KARNATAKA

The milk unions become members of a Co-operative Milk Marketing Federation by subscribing share capital to it as per the provision of the bylaws of the federation. It is responsible for evolving and implementing policies on cooperative marketing of all member unions' liquid milk and milk products, deciding the product-price mix, cooperative provision of joint services (artificial insemination, breeding, cattle feed, etc.), cooperative marketing of technical inputs to members and strengthening the institutional structure of the dairy cooperatives. The Federation's Board consists of the elected chairmen of all the member's unions and the Federation's Managing Director. There are also other members on the board as ex-officio and also as technical experts.

The board of the federation evolves the federation's policies on all its functions. Equitable distribution of profit is done on the basis of business transacted by the milk unions with the Federation and as per the provisions of the bylaws. The federation's board is advised by its programming committee, which is composed of each member union's chief executive, the federation's chief quality control officer, and one or more non-voting co-opted technical experts. The committee meets on a regular basis and is also responsible for the day-to-day implementation of the Board's policies and plans. In 2023, KMF has 14 milk unions throughout the Karnataka state which procure milk from Primary Dairy Cooperative Societies (DCS) and distribute milk to the consumers in various urban and rural markets in Karnataka State with 26.44 lakhs members. Table-1 reveals the functioning of district milk unions covering all the districts of Karnataka state.

**Table –1 Functioning of District Milk Unions under KMF in Karnataka**

S. No	Milk Unions	Full Name of District Milk Unions	Excellence
1	BAMUL	Bengaluru Urban, Rural and Ramanagara District Co-operative Milk Producers Societies Union Limited.	Biggest Fully computerized Dairy with no human handling of milk in South India with the distinction of having highest procurement and highest sale of milk by any dairy in Karnataka and highest seller of curds in the country; Union with lowest Distribution transportation cost.
2	HAMUL	Haveri District co-operative Milk Union	Newly Started
3	BEMUL	Belgaum District Co-operative Milk Producers' Societies' Union Limited	Highest procurement of Buffalo milk; Famous for delicious kunda; and Selling 40 TLPD of milk in Goa
4	RBKMUL	Raichur, Ballari & Koppal Districts Co-operative Milk Producers' Societies Union Ltd.	Record production and supply of high yielding SSG Hybrid Maize seeds; Sale of market milk in neighbouring areas of AP
5	VBMUL	Vijayapura & Bagalkot District Co-operative Milk Producers' Societies' Union Ltd	Union has turned around after wiping off huge accumulated losses
6	CHAMUL	Chamarajanagar District Co-operative Milk Producer's Societies Union LTD.	All DCS in the district are covered under the "Cluster Artificial Insemination (AI) Centres
7	DKMUL	Dakshina Kannada Co-operative Milk Producers' Union Limited	Highest patronage of pouring member producers; Highest milk procurement price to producers; Highest per animal off take of Cattle Feed, much above the standards set by any nutritional Board
8	DHMUL	Dharwad District Co-operative Milk Producers' Societies' Union Ltd	Known for quality Dharwad peda, Kuduke Mosaru(set curds in earthen pot) and 10g butter chiplets
9	HAMUL	Hassan Co-operative Milk Producers' Societies Union Ltd	Union has more National Energy Conservation awards; Highest AI



			done per centre; Union with highest surplus milk
10	KBYMUL	Kalaburgi-Bidar and Yadgir Co-operative Milk Producers' Societies Union Limited	Union with resplendent of Self-Help Groups and women societies with four Women Directors on the Union's Board for the first time in the State.
11	KOMUL	Kolar District Co-operative Milk Producers' Societies' Union Limited	Pioneer in implementing Clean Milk Production Programme, in starting Community Milking parlours, BMC Installations, First to launch Good life UHT milk with highest production, Known for quality cheese, Flavoured drinking Yoghurt, Ghee in pearlpet jars; Masti Dahi. Obtained primacy by having a first elected Woman Director on the Board
12	MAMUL	The Mandya District Co-operative Milk Producers' Societies' Union Limited	Union with highest milk procurement from a single compact district; Leading in BMCs sanctioned under NDP for any Union in the country; Excellent Skim Milk Powder packed in 50 gm in metalised polyster packs, 200 and 500 gm cartons, first union to export powder and to adopt rationalized price structure
13	MYMUL	Mysuru District Co-operative Milk Producers' Societies' Union Limited	Union with highest milk parlours in the city; Pioneer in establishing Fodder Densification Unit in South India; First to construct ground level water storage tanks in many DCSs for making available drinking water to cattle during drought
14	SHIMUL	Shivamogga Co-operative Milk Producers' Societies' Union Limited	Pioneer in promoting growing herbal medicinal plants by women farmers
15	TUMUL	Tumakuru Co-operative Milk Producers' Societies' Union Limited	First milk union to turn around after availing the financial assistance under rehabilitation scheme of GOI
16	CHIMUL	Chikkaballapura District Co-operative Milk Producers Union Ltd	Newly Started

Source: Annual Report of KMF – 2023

## VIII. GROWTH IN DCSS, MEMBERSHIPS, MILK PRODUCTION OF KARNATAKA MILK FEDERATION IN KARNATAKA

The federation brings efficiency in dairy processing plants/producer-owned and controlled dairy institutions, thereby enabling optimum value of milk to milk producer farmers and supply of quality milk to consumers. Karnataka Cooperative Milk Producers' Federation Limited (KMF) is the Apex Body for the dairy co-operative movement in Karnataka. It is the second largest dairy co-operative amongst the dairy cooperatives in the country. In South India, it stands first in terms of procurement as well as sales. One of the core functions of the Federation is the marketing of Milk and Milk Products. The Brand 'Nandini' is the household name for Pure and Fresh milk and milk products. KMF has 16 Milk Unions covering all the districts of the State which procure milk from Primary Dairy Cooperative Societies (DCS) and distribute milk to consumers in various Towns/Cities/Rural markets in Karnataka.

The Karnataka Cooperative Milk Federation has 27 dairy processing plants with a capacity of 92.50 lakh liters/day. The organization has 44 milk chilling centers, 1941 bulk milk center units, and 7 milk product dairies which manufacture 288 Million Tonnes (MTs) of milk powder and different milk products every day. The Karnataka Milk Federation has 7 cattle feed plants that produce 70616 MTs of cattle feed and 550 MTs of Mineral mixture/ month. These plants have secured quality mark certification for quality production and supply of cattle feed and mineral mixture to producers. At present 15210 primary dairy co-operative societies are functioning, under 16 district milk unions with 26.44 lakh milk producers who are enrolled as members, out of which, 8.76 lakh farmers are active members.

**Table –2**

**Trends in Growth of Functioning and Memberships of DCSs under KMF in Karnataka (Between: 2013-14 to 2022-23)**

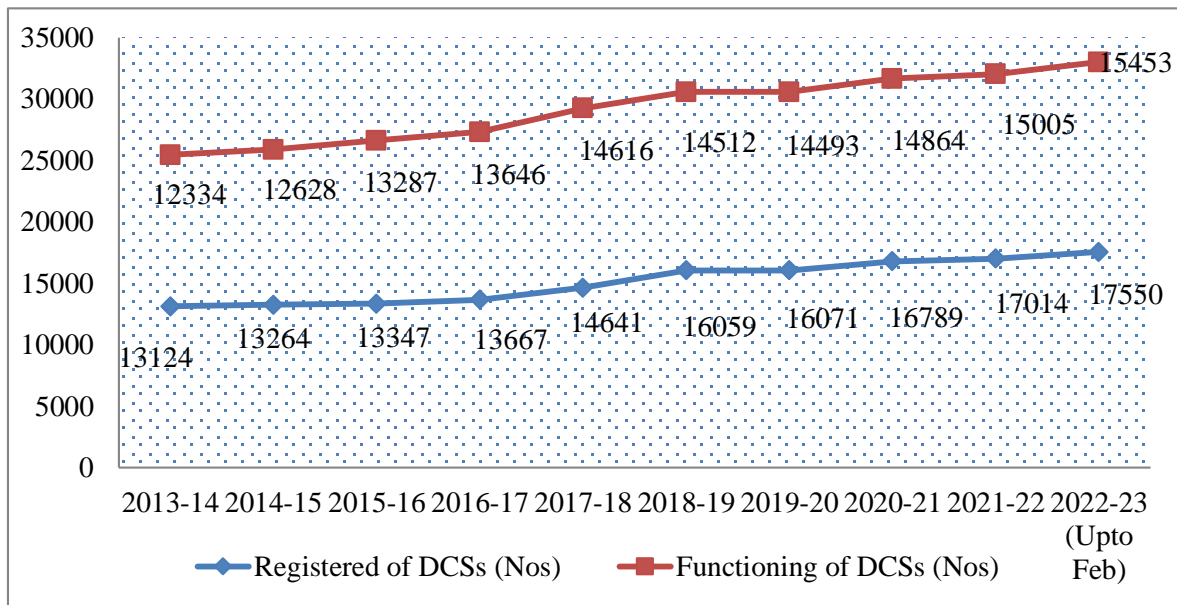
**(In Numbers)**

<b>Year</b>	<b>Registered of DCSs</b>	<b>Functioning of DCSs</b>	<b>Memberships (Nos. In Lakhs)</b>
2013-14	13124	12334	22.47
2014-15	13264	12628	23.07
2015-16	13347	13287	23.50
2016-17	13667	13646	24.05
2017-18	14641	14616	24.60
2018-19	16059	14512	24.74
2019-20	16071	14493	24.75
2020-21	16789	14864	25.71
2021-22	17014	15005	25.90
2022-23 (Upto Feb)	17550	15453	26.44
<b>Average</b>	<b>15152.6</b>	<b>14083.8</b>	<b>24.523</b>
<b>CAGR (%)</b>	<b>3.76</b>	<b>2.44</b>	<b>1.72</b>

**Source:** Annual Report of KMF – 2015-15 to 2020-23.

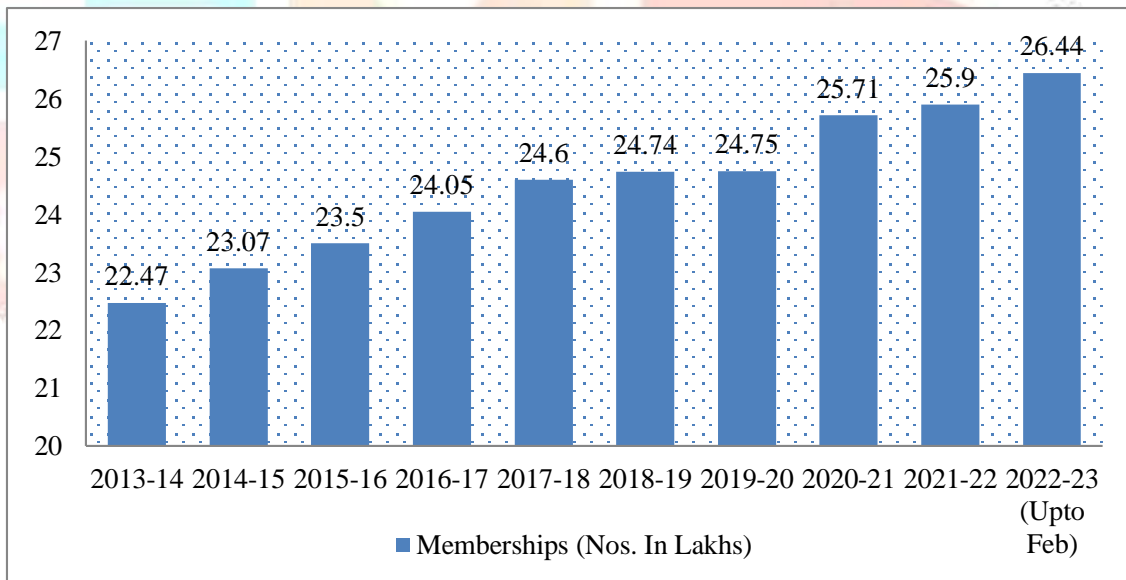
**Graph-1**

**Trends in Growth of Registered and Functioning of DCSs under KMF in Karnataka (Between: 2013-14 to 2022-23)**



**Graph-2**

**Trends in Growth of Enrolled Memberships under DCSs by KMF in Karnataka (Between: 2013-14 to 2022-23)**



The above table and graph give the data of information about the trends in the growth of functioning and memberships of DCSs under KMF in Karnataka state during the period from 2013-14 to 2022-23, in terms of average and compound annual growth rate. During 2013-14, the total number of registered DCSs was 13124, which significantly increased to 17550 up to February 2022-23. The total number of DCSs working in the entire district under KMF was 12334 in 2013-14, which predominately increased to 15453 up to February of 2022-23. Also milk producers enrolled in DCSs were 22.47 lakhs in 2013-14, which significantly increased to 26.44 lakhs up to February 2022-23.

Table –3

**Trends in Growth of Annual Average Milk Procurement and Milk Sales under KMF in Karnataka  
(Between: 2013-14 to 2022-23)**

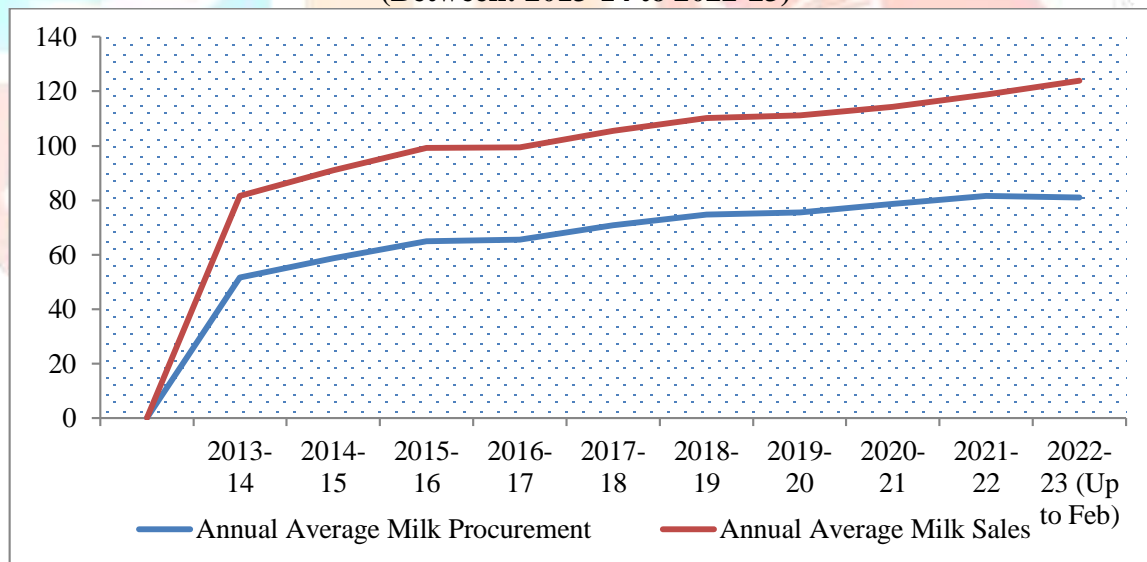
(Milk Procurement in LKPD and Milk Sales in LLPD)

Year	Annual Average Milk Procurement	AGR (%)	Annual Average Milk Sales	AGR
2013-14	51.64	-	29.92	-
2014-15	58.67	13.61	32.31	7.99
2015-16	64.86	10.55	34.37	6.38
2016-17	65.48	0.96	33.92	-1.31
2017-18	70.77	8.08	34.72	2.36
2018-19	74.80	5.69	35.47	2.16
2019-20	75.61	1.08	35.57	0.28
2020-21	78.73	4.13	35.59	0.06
2021-22	81.66	3.72	37.17	4.44
2022-23 (Up to Feb)	81.05	-0.75	42.82	15.20
<b>CAGR (%)</b>	<b>4.86</b>		<b>2.79</b>	

Source: Annual Report of KMF – 2015-15 to 2020-23.

Graph–3

**Trends in Growth of Annual Average Milk Procurement and Milk Sales under KMF in Karnataka  
(Between: 2013-14 to 2022-23)**



The above table shows the trends in the growth of annual average milk procurement and milk sales under KMF in Karnataka during the period between 2013-14 and 2022-23, in terms of annual growth rate and compound annual growth rate. During 2013-14, the annual average milk procurement under KMF was 51.61 liters kgs per day (LKPD), which significantly increased to 81.66 LKPD in 2021-22, and then it positively decreased to 81.05 LKPD up to February 2022-23.

Whereas trends in the growth of annual average milk sales under KMF in Karnataka during the period between 2013-14 and 2022-23, in terms of annual growth rate and compound annual growth rate. During 2013-14, the annual average milk sales under KMF was 29.92 lakh liters per day (LLPD), which significantly increased to 42.82 LLPD up to Feb 2022-23.

## IX. TESTING HYPOTHESIS

H0: There is no significant correlation between dairy cooperative societies and average milk procurement in Karnataka.

H1: There is a significant correlation between dairy cooperative societies and average milk procurement in Karnataka.

**Table -4**

**Correlation Result Between DCSs and Average Milk Procurement under KMF in Karnataka**

Variables	Mean	Std. Devi	Pearson Correlation	Sig.
DCSs (In Nos.)	14083.8000	1052.70971	.972*	0.000
Average Milk Procurement (LKPD)	70.3270	10.00342		

\*. Correlation is significant at the 0.01 level (2-tailed).

The above table results that the correlation between dairy cooperative societies and average milk procurement in Karnataka. The calculated mean values of DCSs and average milk procurement are 14083.8000 and 70.3270 respectively. The tested standard deviation values of DCSs and average milk procurement are 1052.70971 and 10.00342 respectively. The tested Pearson correlation value is .972, at a significant 1% level. However, the null hypothesis was accepted and the alternative was rejected. Hence, it implies that DCSs have a significant role in the average milk procurement under KMF in Karnataka state.

more effective and efficient the selection criteria for the shares in the period are: Shares with no missing values in the period, Shares with adjusted  $R^2 < 0$  or F significant (p-value)  $> 0.05$  of the first pass regression of the excess returns on the market risk premium are excluded. And Shares are grouped by alphabetic order into group of 30 individual securities (Roll and Ross, 1980).

## X. CONCLUSION

It can be concluded that the performance and growth of the Karnataka Milk Federation in the state of Karnataka. KMF which is most popular as KMF evolved itself as a premier and most profitable dairy farmers' organization in the State of Karnataka. The several functions of KMF are to ensure the provision of inputs for milk production, processing facilities, and dissemination of know-how. To facilitate rural development by providing opportunities for self-employment at the village level, preventing migration to urban areas, and introducing a cash economy and opportunity for a sustained income. The KMF is making great efforts to ensure that DCS operates as profitable business units and that producer members play an active role in the management of their DCS. Determined efforts are being made continually to build the capacities of our member producers by making large investments in member education and training. KMF is developing its training facilities into state-of-the-art facilities and has conducted many need-based training programs for farmers. KMF is making all-out efforts in market development and is successful in garnering a significant market share of over 65% in liquid milk, which is considered to be the highest by a cooperative brand in any city.



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