GEOGRAPHICAL ANALYSIS

RESEARCH ARTICLE

Assessment of Milk Procurement in Mysore District

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Abstract

Milk procurement is the process of collecting milk from farmers or dairy producers and transporting it to processing plants or other milk collection points. The process involves collecting, testing, transporting, and paying for the milk. The milk is tested for quality, and payment is based on the quantity and quality of the milk provided. Efficient milk procurement is critical to the success of the dairy industry, ensuring a steady supply of raw milk for processing into various dairy products. Strong relationships between farmers, producers, and processing plants, as well as efficient transportation and testing systems, are key to an effective milk procurement system. This study is mainly concentrations on taluk wise milk procurement in Mysore district.the assumption existence that the results from samples which gives the partialities that must be considered while originating a procurement at developing an approach and all the data's collected were done through Survey and interactions with providers and their feedback were interpreted. Methods have been used in this study mainly with the help of primary data collection questionary survey and secondary data collected from Mysore Milk Union Limited (MYMUL). Analysis of the bar graph to know the changes of Taluk-Wise Milk Procurement in Mysore District 2010-11 to 2020-21. the Arc Gis 10.3 Software used for mapping the distribution of Taluk-Wise Milk Procurement in Mysore District 2019-2020 as classify into 3 categories i.e., Low, Moderate, and High in each taluk. The results show that each taluk-wise exact procurement is 54,895 High milk procurement comes under Periyapatna and Hunsur taluks.

Keywords: Procurement; Farmers; Dairy Producers; Transporting; Processing Plants

Introduction

India is the world's largest manufacturer and customer of dairy. The dairy industry in India was worth INR 5,000 billion in 2016. India is also globally the largest milk producing country since 1997. In India, the co-operatives and private dairies have access to only 20% of the milk produced. Around, 34% of the milk is sold in the muddled market while 46% is consumed locally. This contrasts with most of the developed nations where almost 90% of the surplus milk is passes through the organized sector.

Dairy is the main branch of food industry, as like many other branches. It is a business enterprise, in which animal milk is harvested and processed. With industrialisation and urbanisation, the supply of milk became a commercial industry, with specialised breeds of cattle being developed for dairy. Hence, India is the enormous milk producer, with 18 percent of global milk production, subsequently to the United States of America, China, Pakistan, and Brazil. Dairying in India, is inter-woven as an essential part and proximate to agriculture, but it did not receive as much attention relative to crop production as it strongly deserves. Karnataka stands 11th in the list of top milk producing states in India [12].

The state of Uttar Pradesh is the highest milk producing in India contributively around 18% to the total milk production, shadowed by Rajasthan, Andhra Pradesh, Gujarat and Punjab causative 11%, 10%, 8% and 7% correspondingly. India distributed dairy products of around USD 0.2 Bn in the year 2014-15. These include products like skimmed milk powder, casein milk, cream, etc. The chief termini include Bangladesh, UAE, and other South East Asian countries (Department of Animal Husbandry, Dairying and Fisheries). The dairy industry is dependent on a perishable raw material i.e., milk which is subject to wide periodic variations. A milk-shed area is the geographical region from which a marketing agency secures its fluid supply. The number of milk collection centre, the number of milk producers pouring milk at the collection centre, distance of milk collection centres, price paid by different milk procurement agencies, regularity of expense are the other thoughts that determine milk procurement [9].

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The milk procurement system of a private dairy firm that buys milk from two channels, namely from farmers and through intermediaries and concluded that it is obvious and shown through experiments that when milk availability to the system increases the prices offered to the farmers falls. When the farmer becomes more sensitive to price offered, price competition between the intermediary and the processing unit increases.

Milk is a perishable commodity and bacteriological activity starts directly after milking which primes to squalor of quality of milk. Rendering to numerous international standards, it is compulsory that immediately after cooling, milk must be cooled preferably to 4 Degree Celsius. This necessitates mechanical refrigeration or milk cooling tanks. It is important to remember that under a hot environment milk will spoil within 3 to 4 hours after milking due to increased bacteriological activities. There is a necessity for Village created milk procurement systems for deliberation, testing quality of milk conventional and making payment to milk producers due to the developments of Efforts to increase milk production through an increase in productivity would result in a growing marketable milk excess. It will be important to sustenance this effort by providing milk producers better opportunities for sale of surplus milk by expanding village milk procurement systems that facilitate fair and translucent transactions. Private sector, large MNCs and retail chains are quickly growing their operations into the dairy business. It is evaluated that they have created processing capacities in the last fifteen years equivalent to those set up by cooperatives in further than 30 years. While the private sector will cultivate it is important-in the interests of livelihoods and inclusiveness that collectives retain their existing 50% share of the milk handled by the organized sector even in 2016-17. Based on their growth trend in the last fifteen years, cooperatives are likely to expand milk procurement from a current level of about 260 lakh kilograms of milk/day to about 360 lakh kilograms per day in 2016-17 even if they do not undertake any significant expansion in their current area of operations.

Cooperatives presently procure about 16% of the national marketable surplus covering around 21% of the country's villages and 18% of the rural milk producing house-holds. It will be needed for the cooperative sector to achieve a procurement share of at least 20% of the marketable milk surplus by 2016-17 so that it retains an overall 50% share of the marketable surplus handled by the organized sector. Consequently, consolidation of the dairy cooperatives has been imagined. Proposed activities to be financed would include: Mobilization and institution building of small holder milk producers i.e., 30 percent women and 17 percent SC/ST members in their member DCS, through expansion of selected existing milk unions who in turn will strengthen selected existing village dairy cooperatives societies (DCSs) and organize new DCSs in the uncovered villages. Training and capacity building of milk producers and other functionaries; and Investments in village level infrastructure for milk collection and bulking such as milk cans, Bulk milk coolers for a cluster of villages, associated weighing and testing equipment, and linked IT equipment.

KMF is the third largest co-operative in the co-operative sector in the country. At present in terms of procurement and sale, it stands first in south India. The KMF has 14 milk unions throughout the state which procure milk from village dairy cooperative societies (DCS) and distribute milk to the consumers in various towns, cities, and rural markets in Karnataka state. The Anand Milk Union Limited

(AMUL) pattern of dairy co-operatives started functioning in Karnataka from 1974 to 1975 with financial assistance from World Bank, operation flood II and III. The dairy co-operatives were established under the Anand pattern in a three-tier structure with the village level dairy co-operatives farming at the base level, the district level milk unions at the middle level to take care of the procurement, processing, and marketing of milk, the third tier is KMF as the apex body to co-ordinate the growth of the dairy sector at the state level.

Milk procurement typically involves several steps, including

The milk procurement process typically involves several steps, which may vary depending on the location and infrastructure of the dairy industry. Here is a general overview of the milk procurement process:

Collection centers: Milk collection centers are established in various locations to facilitate the collection of milk from dairy farmers or milk producers. These centers are often located in rural areas, where the majority of milk production takes place. Farmers bring their milk to the collection centers, where it is weighed and tested for quality.

Quality testing: The quality of the milk is tested for factors such as fat content, protein content, and bacterial count. The milk is rejected if it fails to meet the required standards.

Transportation: Once the milk is tested and accepted, it is transported to the dairy processing plants. The transportation process can be by road, rail, or waterways, depending on the location and availability of infrastructure.

Payment: Farmers or dairy producers are typically paid for their milk based on the quantity and quality of the milk they provide. Payment may be based on the butterfat or protein content of the milk, or on other factors such as seasonality or geographic location.

Processing: At the dairy processing plant, the milk undergoes various processes, including pasteurization, homogenization, and separation, to produce various dairy products.

Distribution: The dairy products are then distributed to various retail stores, supermarkets, and other outlets for consumption by consumers.

Study Area

Mysore district is located in the southern part of the Indian state of Karnataka. Mysore district extends between 11°44' N to 12°39' N latitudes and 75°54' E to 77°8' E and The district is spread over an area of 6,854 square kilometers and its claim 3.29 percent of the total area of Karnataka State. population of over 3 million people, according to the 2011 census. The district is divided into 7 taluks (administrative subdivisions) which are Mysore, Hunsur, Piriyapatna, Krishnaraja Nagar, Nanjangud, T. Narasipur, and H.D. Kote. 33 Hobilies, 235 Panchayath, five towns, three municipalities, and one city corporation. The district having 1216 inhabited villages and 124 uninhabited villages.

Mysore city, also known as the cultural capital of Karnataka, is the district headquarters and is famous for its rich cultural heritage, palaces, temples, and gardens. It is also a major center for the production of silk and sandalwood products.

The study area of Mysore district is diverse in terms of its topography, climate, vegetation, and land use. Mysore district closely connected with the State capital of Bangalore which is rich in economic and commercial activities. Mysore district sensed moderate climate, the district mainly comes under Tropical monsoon climate and experiences four major seasons, April is the hottest month and recorded mean daily maximum temperature is 34^0C and recorded mean daily minimum temperature is 21^0C December is the coldest month and recorded mean daily maximum temperature 27 ^{0}C and recorded mean daily minimum temperature 16 ^{0}C. During winter the temperature decreased in a single day below 11^0C. Temperature is favourable to all activities of human, it makes crazy about setting people in Mysore. The district is situated on the Deccan Plateau, with the Western Ghats Mountain range to the west and the Cauvery River flowing through the district. The district has a tropical climate with hot summers and moderate winters.

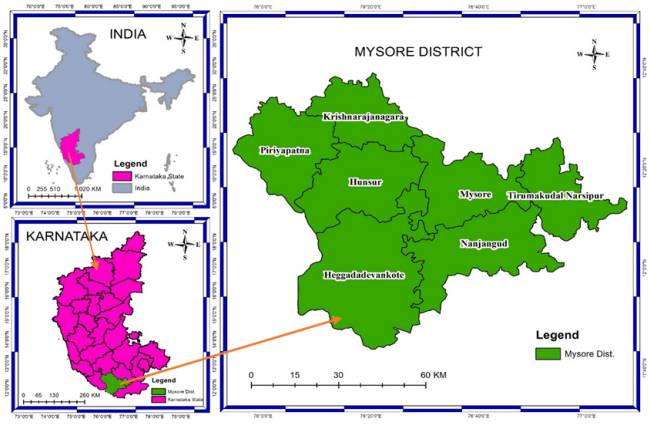

Fig. 1. Location map of study area

The vegetation in the district includes deciduous forests, scrublands, grasslands, and agricultural lands. The forests are home to a variety of wildlife such as elephants, tigers, leopards, deer, and various species of birds. The agricultural lands are mainly used for the cultivation of paddy, sugarcane, and other crops.

In terms of socio-economic indicators, the district has a literacy rate of 70.54%, which is higher than the state average of 75.36%. The district has a diverse economy, with industries such as information technology, silk weaving, and sandalwood carving contributing to the local economy. The district is also home to several prominent educational

institutions, including the University of Mysore, which is one of the oldest universities in India.

Overall, the study area of Mysore district offers a rich and diverse environment for researchers in various fields such as ecology, geography, economics, and social sciences.

Objectives

1. To Study and Analysis of Taluk-Wise Milk Procurement in Mysore District from 2010-11 to 2020-21.

Methodology

Methods have been used in this study mainly with the help of primary data collection questionary survey and secondary data collected from Mysore Milk Union Limited (MYMUL). Analysis of the bar graph to know the changes of Taluk-Wise Milk Procurement in Mysore District 2010-11 to 2020-21. the Arc Gis 10.3 Software used for mapping the distribution of Taluk-Wise Milk Procurement in Mysore District 2019-2020 as classify into 3 categories i.e., Low, Moderate, and High in each taluk.

Results and Discussion

Mysore district is an important milk-producing region in Karnataka, India, and milk procurement is a significant part of the agricultural economy in the district. The Mysore Milk Union Limited (Mymul) is a major dairy cooperative society that procures milk from farmers in the district. As per Mymul's website, the daily average milk procurement in Mysore district is approximately 3.5 lakh liters, with the highest procurement from taluks such as Hunsur, Periyapatna, and K.R. Nagar.

Mymul has a network of milk collection centers across Mysore district, where farmers can bring their milk for sale. The milk is then transported to processing plants for further processing into various dairy products such as milk, butter, and ghee. Mymul also provides various support services to dairy farmers, including veterinary care and training programs.

Apart from Mymul, there are also private milk collection centers and dairy companies that procure milk from farmers in Mysore district. However, the exact figures on district-wide milk procurement may not be readily available, as they can vary based on various factors such as seasonality, weather conditions, and market demand.

Analyzing taluk-wise milk procurement data can help dairy industry stakeholders to forecast future milk supply, which is important for planning production, managing inventory, and meeting consumer demand. Analyzing taluk-wise milk procurement data can provide insights into which regions are producing the most milk and which regions have the highest growth potential for milk production. This information can help dairy industry stakeholders to develop targeted strategies to increase milk production in certain areas. Analyzing the quality of milk collected from different taluks can provide insights into the factors that affect milk quality, such as animal feed, breeding practices, and environmental conditions. This information can help dairy farmers to improve their milk quality, which can lead to better prices and increased profitability. Studying taluk-wise milk procurement data can help milk collection centers and dairy processing plants to identify inefficiencies in the milk collection and transportation process. By addressing these inefficiencies, they can reduce costs and improve the speed and reliability of milk collection.

This analysis can provide valuable information of Taluk wise Milk Procurement (in litres) in Mysore district 2010-11 to 2020-21 (Table 1).

The procurement of milk increased in the Mysore district from 2010-11 was 2,04,904 litters per day which were increased to 6,11,164 litres per day in 2019-20. But in 2015-16 the procurement of milk was decreased because of the bifurcation of the Mysore district into two unions such has MYMUL and CHAMUL.

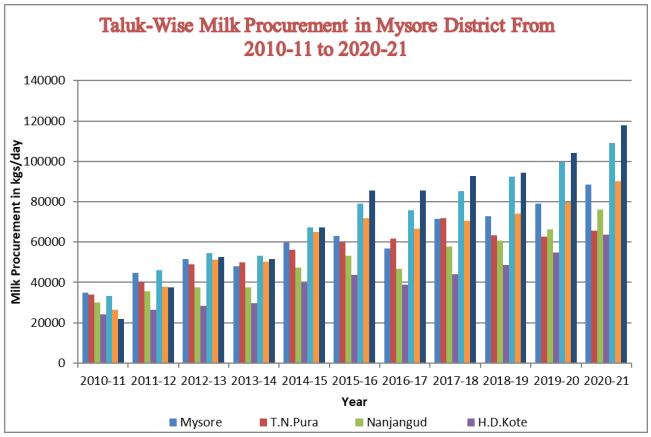

Fig. 2. Taluk wise Milk Procurement in Mysore district from 2010-11 to 2020-21

Above Figure 3 depicts low, Moderate, and high taluk wise milk procurement in Mysore district in 2019-2020. Each taluk-wise exact procurement is 54,895. Out of seven taluks three taluks are come under low milk procurement between i.e. T.N.Pura, Nanjangud and H.D.Kote taluks, the Moderate milk procurement come under K.R.Nagar and Mysore taluks , and High milk procurement comes under Periyapatna and Hunsur taluks.

Conclusion

Milk procurement is a complex process that involves several steps, including collection, testing, transportation, processing, and distribution. The efficiency of the milk procurement

Table 1. Taluk wise Milk Procurement (in litres) in Mysore district 2010-11 to 2020-21

Years	Name of the Taluks							District Total
	Mysore	T.N.Pura	Nanjangud	H.D.Kote	Hunsur	K.R.Nagar	Periyapatna	
2010-11	35,016	34,082	30,088	24,199	33,274	26,449	21,796	**2,04,904**
2011-12	44,768	40,145	35,736	26,363	46,016	37,835	37,689	**2,68,552**
2012-13	51,480	48,977	37,507	28,249	54,484	51,368	52,557	**3,24,622**
2013-14	47,862	49,908	37,544	29,690	53,232	50,258	51,503	**3,19,997**
2014-15	59,613	56,124	47,324	39,884	67,279	64,925	67,317	**4,02,466**
2015-16	62,989	59,999	53,265	43,894	78,998	71,789	85,540	**4,56,474**
2016-17	56,961	61,833	46,558	38,865	75,712	66,758	85,558	**4,32,245**
2017-18	71,621	71,983	57,635	44,189	85,222	70,509	92,656	**4,93,815**
2018-19	72,848	63,281	60,688	48,649	92,473	74,231	94,523	**5,06,693**
2019-20	78,910	62,735	66,243	**54,895**	99,504	79,800	**1,04,016**	**5,46,103**
2020-21	88,532	65,572	76,244	**63,761**	1,09,044	90,129	**1,17,882**	**6,11,164**

Source: MYMUL-2021

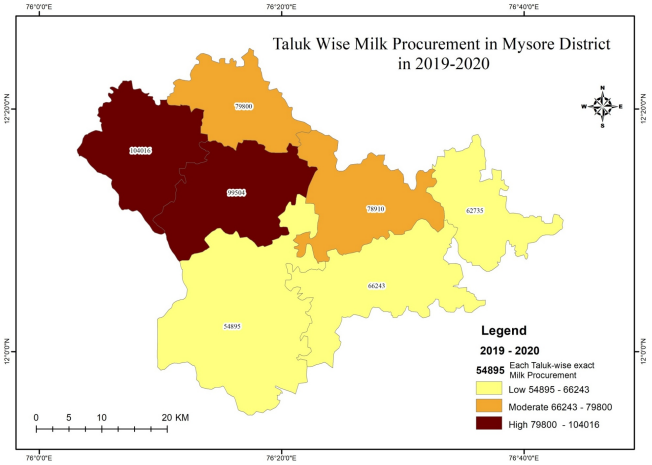

Fig. 3. Taluk wise milk procurement in Mysore district in 2019-2020

process is critical to the success of the dairy industry, as it directly affects the quality and availability of dairy products to consumers. Mysore district is one of the leading producers of milk and milk products of the state. MYMUL has higher sales of ghee, buttermilk, Mysore Pak, peda, and curds. Finally, dairy farming in the Mysore district shows growth and a good future for development. The highest activity of milk procurement majorly showing Periyapatna and Hunsur taluks.

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