

Performance and future prospects of the dairy sector in Kerala

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Introduction

Being blessed with the necessary endowments, dairy sector is emerging as major source of income and employment in the state. The fact that in 2020, the milk production in Kerala reached a volume of 2.5 billion litres only serves to exemplify this point. Currently representing the twelfth largest dairy market in India, Kerala has the highest number of crossbred cattle (94 %) as a proportion of the total cattle population (Department of Animal Husbandry & Dairying 2013).

Livelihood of the farmers centres around the dairy sector as majority (90%) of them are marginal farmers who own about 87 per cent of the total cattle population. Additionally, the industry is crucial in ensuring the livelihood of rural women. According to the FAO (2018) report, more than 500 million poor people depend on livestock, majority consisting of small and marginal farmers. The dairy sector plays a key role in securing the Sustainable Development Goals (SDGs), particularly SDG-1, SDG-3, SDG-5, SDG-8, and SDG-10, and as a result, it has a big impact on how common people live their lives. Despite being a highly advanced industry, dairying sector in the state is yet to reap its potential. As a result, the state has to traverse a long distance in achieving self-sufficiency in milk production. Consequently, it depends on the neighbouring states for meeting it already burgeoning demand for milk and milk products; clearly evidenced by the fact that the import of milk into the State is hovering around two lakh litres per day.

The industry at large in Kerala is marred by issues that impinge on the dairy sector of India as well - it is persistently unorganised, dominated by a large number of small as well as

marginal dairy farmers. This paper aims to bring to light these problems, specific initiatives aimed at targeting them and to establish why this sector is brimming with opportunities and could quite possibly pave the way for market expansion in the region.

Features of the dairy sector in Kerala

- First, Kerala's dairy sector may be characterised as a low input-low output system. The overall picture of animal farming in Kerala is dotted with small homesteads integrated with crop cultivation and fisheries. The average herd size in small homesteads does not normally exceed 3, while in medium sized homesteads the herd size goes up to 9. More than 55 per cent of cattle farmers maintain herd sizes of 2 or 3, while 32 per cent maintain single-cow units. The number of commercially operating dairy farms with larger herd sizes are less in Kerala.
- Secondly, Kerala trumps the national average in terms of productivity of cattle despite being weighed down by low herd sizes. The average milk yield per animal in India for exotic/crossbred animals is 7.9 kg and for indigenous/non-descript animals is 3.0 kg per day. The corresponding figures for Kerala are 10.2 kg per day and 3 kg per day respectively
- Thirdly, the next decade will be witness to a surge in demand for milk and milk products A study by the NCAER (2014) argued that the total demand for milk was 27.9 lakh tons in 2009-10, which would rise to 32.9 lakh tons in 2020, 34.2 lakh tons in 2025 and 35.2 lakh tons in 2030.
- Fourthly, in its efforts to raise milk production, Kerala would face a key constraint in the form of fodder production. Studies show that the ideal roughage to concentrate ratio for livestock is 60:40. In Kerala, the share of concentrate is currently above 60 per cent. This imbalance in feeding is known to create several stresses to the animals.

Challenges faced by the sector

Vishnu et al (2018) conducted a study in four districts of the State to explore various constraints associated with dairy farming as perceived by the farmers. The results reflect the constraints in addition to those mentioned earlier - increased price of cattle feed, non-remunerative price of milk, high cost of credit, unavailability of required manpower for cattle health care, unavailability of dry and green fodder etc. were some of the important constraints reported by majority of the respondents. Increasing production cost stemming from the

spiralling cattle feed prices, cost of health care of the cattle and associated service charges etc. were leveraging a irrecoverable hit to the income earned from the milk sale. There were also concerns regarding the unavailability of timely veterinary service and the charges incurred in delivery of technical service. This mainly happens because, of the shortage of manpower in the veterinary dispensaries. High cost of credit was another important constraint, according to the respondents. Disbursal of credit from institutional sources was muddled by discrimination between crop and livestock farmers.

Trends in milk production

Out of 25.34 lakh MT of milk produced in the State, major share was produced by cross bred cows (93.54 per cent). Indigenous cows produced only 0.319 lakh MT of milk (1.26 per cent). The production of milk from goat was 1.19 lakh MT (4.71 per cent). The rest was contributed by non-descript cattle, indigenous buffalo and non-descript buffalo.

Over the 12th plan period, there was a sharp fall in the VOO for milk and milk products. One reason for this fall was the incidence of the foot-and-mouth disease among cattle in Kerala in 2013-14, whose impacts continued through the 12th plan period. Within bovines, more than 33,000 animals were affected and about 2800 animals died.

In the 13th plan period, the decline in milk production was arrested and there was a moderate rise in milk production. The milk production in 2019-20 stood at 25.4 lakh tons, which was slightly higher than the production figure of 25.2 lakh tons for 2015-16. Further, in 2016-17, there was a severe drought that adversely affected the production of milk. The procurement of milk recorded a fall by about 1 lakh tons in 2016-17. In January 2016, MILMA imported about 1.6 lakh tons of milk per day from outside the State. Post-drought, in January 2017, MILMA was importing about 4 lakh tons of milk per day. Clearly, if there no floods in 2018 and 2019, there would have been a visible revival of production.

Data with the Dairy department show that Kerala's dependence on imported milk is declining. In 2016-17, about 9 lakh litres of milk were imported into the State every day. By 2019-20, Kerala was able to reduce the dependence on milk imports to about 3.2 lakh litres per day.

The moderate revival of milk production during the 13th plan period was a reflection of improved levels of intervention by the government in milk procurement. In 2016- 17, the

procurement of milk through dairy cooperatives was 5.9 lakh tons (see table 2). From 2017-18, this could be raised up to 6.8 lakh tons by 2019-20. On a per day basis, this represented a rise of procurement from 16.3 lakh litres per day to 18.6 lakh litres per day.

Table 1. Procurement milk through dairy cooperatives, Kerala, 2007-08 to 2019-20, in lakh MT per annum and lakh litres per day		
YEAR	Procurement of milk through dairy cooperatives	
	In lakh MT per annum	In lakh litres per day
2007-08	4.1	11.2
2008-09	4.0	11.1
2009-10	4.3	11.7
2010-11	4.1	11.2
2011-12	4.5	12.4
2012-13	4.9	13.4
2013-14	5.3	14.4
2014-15	5.6	15.3
2015-16	6.0	16.4
2016-17	5.9	16.3
2017-18	6.6	18.1
2018-19	6.8	18.6
2019-20	6.8	18.6

Source: Department of Dairy, Government of Kerala.

Department of dairy development

Kerala has a separate Department of Dairy Development, which functions as the nodal agency for rural dairy extension, fodder resource development and rural milk marketing in the State.

Department is concerned about the socio-economic stability of dairy farmers in the state and envisages and implements various projects and schemes targeting the dairy sector.

The department is also the nodal agency for fodder development activities. The policies and strategies adopted by the department aim at strengthening the dairy cooperative sector as well

The Department supported by State Government and Central Government has implemented various schemes in the State with the objectives of :

- Attaining self-sufficiency in milk production,
- Increasing fodder production
- Strengthening of Dairy Co-operatives etc.

The department has 162 dairy extension service units, 14 quality control units, a state dairy lab for testing milk and milk products and cattle feed, three Regional Dairy Labs, 14 Mobile Quality Control Units, six Dairy Training Centres and a State fodder farm.

The average annual production of state is approximately 25.49 metric tonnes out of which dairy cooperatives procure a considerable quantity. Attaining self-sufficiency in milk production is the primary goal and the state is almost ready to achieve the target very soon. Around 3.78 lakh dairy farmers have been registered in the dairy cooperative societies across the state.

Specific policy targeting areas

- Modernisation of Dairy Farming

Currently, the organizational structure of the dairy cooperative sector is dominated by the classical cooperative model. But many developing countries (even Anand co-operatives) are moving beyond the classical co-operative models to reap the benefits of adopting commercial and competitive elements. India's cooperative sector now faces stiff competition and is starting to lose ground to other competitors who are more professionally managed. The cooperative sector is responding by adapting its business models to the new generation models.

- Promotion of Larger Dairy Farms

Rural entrepreneurship currently presents untapped potential, one that could pave the way for establishment of larger commercially run dairy farms in Kerala. Here, it is necessary that policy helps to converge three factors: high yielding cows, fodder/feed availability and marketing facilities. Necessary steps may be taken to deregulate the sector to encourage commercial dairy farming on a larger scale. More recently, the National Green Tribunal (NGT) has issued a new set of guidelines for dairy farms and gaushalas where dairy farms have been moved from red category to orange category. Here, simplifying and unifying rules for dairy farms in Kerala is the panacea. Low cost Effluent Treatment Plants (ETP) have to be encouraged, financially assisted and popularised. The government will also have to explore higher subsidies for feed and electricity as well as offer tax exemptions to new plants.

- Surplus of milk and product diversification

One major lesson learned from the Covid-19 pandemic in the animal husbandry sector in Kerala is the need to attain a greater degree of self-sufficiency in handling animal produce. In the coming years, the State needs to prepare itself for a handling a situation of surplus milk. Thus, Kerala needs a modern milk powder plant as well as an evaporator plant to convert and store surplus milk as milk powder and condensed milk. Feasibility studies are imperative to ascertain the availability of excess milk throughout the year. We also need to aim at developing the production of value-added commodities from milk, such as cheese and yogurt. This implies setting up of advanced product diversification facilities in the existing dairy plants.

Provisions in the state budget 2022-23

This section aims to give a clearer view of the multitude of initiatives aimed at Dairy development in the state.

The outlay provided for the Dairy Development sector for the year 2022-23 is Rs. 9931.00 lakh. Dairy co-operatives in the State are provided with an outlay of Rs. 3498.00 lakh to expand their infrastructure base for milk procurement by creating better cold chain.

Table 2. Scheme wise Budget allocation	
Name of Scheme	Budget Estimate 2022-2023 (Rs. in Thousands)
Rural Dairy Extension and Farm Advisory Services	59500
Assistance to Dairy Co-operatives	349800
Strengthening of Quality Control Labs	40000
Commercial Dairy and Milk Shed Development Programme	330995
Mechanisation and Modernisation of Dairy Farms	30985
Assistance to Purchase Milking Machines	12934
Infrastructure Development and Automation of Commercial Dairy Farms	1328
Assistance to Dairy Development in Wayanad	2500
KLD Board Investment	0
Establishing Kerala State Dairy Management Information Centre at Kerala State Fodder Farm Valiyathura, Thiruvananthapuram	5000
Source: Annual Plan 2022-23- Volume 1 Let us look at the schemes in detail.	

Rural dairy extension and farm Advisory services (Outlay: Rs. 595.00 lakh)

The objective of the scheme is to ensure effective transfer of technology directly to the farmers through personal contacts and assistance to farmers in case of contingencies and natural calamities. The outlay is for the implementation of rural dairy extension services, for conducting seminars/workshops/exhibitions/training programmes, farmers contact programs, quality awareness programme, state dairy expo, extension activities through print and electronic media, implementation of SREP projects, establishing dairy extension service units at selected potential panchayats, implementation of e-office activity in the department, modernization of infrastructure for imparting training and skill development programmes etc.

Assistance to dairy co-operative societies (Outlay: Rs. 3498.00 lakh)

Dairy Co-operative Societies help the dairy farmers to market their produce and act as village information centres. The objectives of the scheme are to bring more farmers under the dairy

Co-operative sector enable to comply with Food Safety and Standards Act (FSSA) 2006, improve the facilities for testing the chemical and microbial/quality of milk, strengthening and modernization of infrastructure of DCSs to improve procurement and marketing etc. The following are the activities proposed under the scheme during 2022-23.

- Cattle feeding subsidy as production incentive to dairy farmers for 100 days
- Assistance to assess & ensure the FSSA 2006 requirements to meet the documentation, registration etc., including setting up of lab facilities
- Operational assistance to newly registered DCSs/assistance for revival of defunct societies
- Need based assistance to DCSs
- Assistance for rainwater harvesting and solar energy conservation
- Assistance to district wise consortium to monitor and maintain the automation & networking system
- Assistance for transportation of milk to the milk route of MILMA etc.

Strengthening quality control labs (Outlay: Rs. 400.00 lakh)

Ensuring quality of milk and milk products produced and marketed in the State is the objective of the scheme. Major objective of the scheme include is to strengthen facilities in

the quality control laboratories in the State, special quality testing drive, setting up of regional labs, quality and hygiene improvement at farm level, milk testing facility at check post etc. An amount of ₹ 400.00 lakh provided for strengthening of quality control.

Commercial dairy and milk shed development programme (Outlay: Rs. 4028.00 lakh)

The objective of the scheme is to stabilize the dairy sector by way of various herd induction programmes and automation/mechanization programmes. The milk shed development programme is aimed at bringing more farmers/entrepreneurs and self-help groups in to the sector and to maintain the productivity of cross bred cows and to create awareness among farmers in adopting scientific management in cattle farming. A transition from subsistence dairy farming to viable commercial dairy farming with technology support is imperative for enhancing production and productivity. The outlay will be utilized for extending the promotion of commercial dairy units to more selected milk shed and other potential areas, cow and heifer units, purchasing milking machines, assistance for cattle shed, women cattle care programme etc. It is envisaged that 50 per cent of beneficiaries of the project will be women.

Production and conservation of fodder in farmers' fields and dairy co-operatives (Outlay:Rs. 760.00 lakh)

The major limiting factor in the dairy sector is scarcity of fodder and on account of this, cost of production is higher in comparison with the neighbouring States. Suitable fodder production programmes are to be promoted to bring down the cost of production. Cultivate perennial green fodder crops, introduce new scientific low cost feeding culture among dairy farmers, uplift the sustainability and reliability in dairying by reducing the feeding cost, improve the general health of the milch animals and the quality of milk, ensure availability of green fodder and planting materials throughout the year, generate employment and income to the producers by sale of fodder etc. are the main objectives of the scheme. It is envisaged that 50 per cent of beneficiaries of the project will be women.

Assistance to dairy development in Wayanad (Outlay: Rs. 25.00 lakh)

Assistance will be provided for the construction/renovation of cattle shed, distributing mineral mixture, and construction of biogas plant, awareness cum training programme,

documentation and monitoring charges. This scheme will be part of the Wayanad package. An amount of ₹ 25.00 lakh is provided as special package for dairy development in Wayanad.

Establishing Kerala state dairy management information centre (KSDMIC) at state fodder farm, Valiyathura (Outlay: Rs.50.00 lakh)

Kerala State Dairy Management Information Centre (KSDMIC) intends to integrate the departmental activities pertaining to co-operation, fodder development, nutrition feeds and fodder, utilization of non-conventional feed stuffs for dairy and animal feeding, indigenous dairy products. The Institute carry out data collection and processing activities, engaged in R&D activities pertaining to the areas viz, suitability of fodder varieties, R&D in indigenous dairy products, adaptability of milch animals to various types of housing systems etc.

Conclusion

It has become evident that dairy sector in Kerala, though growing is crippled with a range of problems. Some of the issues demand immediate interventions in the form of the following:

- A policy level intervention is necessary to converge three factors: high yielding cows, fodder or feed availability and marketing facilities.
- Nutrition efficient feeding practice, mineral mapping of fodder and feed, Government support for mechanization to cut down labour cost and, strengthening of the quality infrastructure facilities are essential for productivity enhancement in the dairy sector.
- Modernization and automation of the dairy sector necessitated the intervention of the youth by extending credit facilities at cheap rates.
- It is necessary to undertake a study of the marketing and supply chains in the dairy sector of the State, and initiate measures to remove bottlenecks from the producer to the consumer. The use of modern information technology along with developing the marketing network of dairy products in the State should be encouraged.

The structure of dairy sector in a large number of developing countries, especially India, suggests that the poor are likely to be the main beneficiaries of this unfolding new food revolution. But, there is also the risk of these opportunities by-passing the poor unless they

receive necessary support to enable them meet the challenges of the new and emerging marketplace.

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