

**A REVIEW :**

# Rediscovering potential of dairy co-operatives in Eastern India

**■ Kalyan Mandi and Ritu Chakravarty****ARTICLE CHRONICLE :****Received :**

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**SUMMARY :** India is the world's largest producer of milk, with 22 per cent of global production. According to NDDB Report 2018-19, India produced 187.7 MT of milk with per capita availability of 394 g/day. The dairy sector contributes 27 per cent of agriculture GDP and 67 per cent of the total output of the Livestock Sector, thus providing livelihood opportunity to 70 million households. Much of the success of the 'White Revolution' in India is attributed to the co-operative framework of dairy development strategies. After operation flood programme, even though India has stood self-sufficient in milk production, but milk production throughout the states in India is not uniformly distributed and therefore, there are huge demand and supply gap of milk and milk products in few states of Eastern India. Due to lack of proper infrastructure for dairy processing and manufacturing of milk and milk products, poor quality of milch cattle and buffalo breeds and lack of dairy services have posed challenged for dairy development. Less participation of dairy farmers in organized sectors like dairy co-operatives creates instability in the farm income for the dairy farmers. Several studies suggest that farmers' participation in dairy co-operatives has resulted in a significant increase in milk production and productivity and has reduced per-unit cost of milk production thereby enabling them to achieve higher output prices, reduced transaction costs and increased profits. Therefore, dairy co-operatives can play instrumental role in harnessing the potential of the dairy sector in Eastern States of India.

**KEY WORDS:**

Milk, Production, Dairy, Farmers

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## **BACKGROUND AND OBJECTIVES**

India is the world's largest producer of milk, with 21 per cent of global production. As, a global leader in milk production, the total bovine population in India is estimated at 299.60 million, out of which cattle is 190.90 million and buffalo is 108.70 million (Livestock Census, 2012). In India, the share of agriculture and allied sector in gross value addition (GVA) is 17.5 per cent and livestock sector share in

GVA is 4.5 per cent (NAS, 2017), thus, providing livelihood opportunity to 70 million households. Much of the success of the 'White Revolution' in India is attributed to the co-operative framework of dairy development strategies. India with the world's largest dairy co-operative structure, at present, constitutes 163 lakh dairy farmer members, 1.77 lakh village dairy co-operative societies, 218 district milk co-operative union and 27 state milk

**Author for correspondence :****Kalyan Mandi**Dairy Extension  
Division, National Dairy  
Research Institute,  
Karnal (Haryana) India  
Email: [kalyan.mandi@gmail.com](mailto:kalyan.mandi@gmail.com)See end of the article for  
authors' affiliations

federations registered under National Dairy Development Board (NCDFI, 2018-19). Milk is one of the major outputs of dairy sector and most of the milk in the country is being produced by small and marginal farmers coupled with landless labourers. India now attained the status of world's largest milk producing nation with an annual production of 187.7 million tones and subsequently the per capita availability of milk hovers around 394 g/day (NDDDB, 2018-19). The annual growth rate in milk has been estimated at 6.50 per cent. The per capita monthly expenditure on milk and milk products is increasing both in rural (Rs. 116.38) and urban areas (Rs. 187.14) (NSSO, 2012). Milk and milk products remain a major source of quality protein and vital nutrients to the majority of Indian population. Dairying, therefore, offers not only nutritional security to the country's large population but also livelihood opportunities to farm families, processors and other stakeholders in the dairy value chain. This also represents sustained growth in the availability of milk and milk products for our growing population. In India, dairying has broader social and economic dimensions, wherein about 70 million rural households are engaged in dairying and contributes 26 per cent income of the poorest households and 12 per cent of rural income in 2017 (NDDDB, 2017-18). Currently, 48 per cent of total milk produced is either consumed at producer level or sold to non-producers in rural areas and 52 per cent of milk is marketable surplus for sale to consumers in urban centres, of which 40 per cent of milk sold is handled by organized sector including DCs and producer companies (20%) and private dairies (19%) and the rest by unorganized sector. Within the organized sector, the co-operative sector is by far the largest in terms of volumes of milk handled. It is planned to increase marketable surplus of milk to 60 per cent by 2021-22, which is mainly to be handled by organized sector to improve livelihoods and economic well-being of milk producers as a part of doubling farmer's income by 2022 (GOI, 2018).

### Dairy co-operatives in dairy development:

Dairy development in India has been acclaimed as one of the most successful development programmes in the world. The co-operatives were conceived as the main vehicle for implementing dairy development programmes in the country and much of the success of the 'White Revolution' in India is attributed to the co-operative framework of the dairy development strategies. Dairy co-operatives first originated in Gujarat and spread

throughout the country with the implementation of operation Flood (OF) programme. A success story on the dairy scene in India during the sixties was the farmer-owned AMUL co-operative in Anand (Kaira district, Gujarat) with its integrated approach to production, procurement, processing and marketing on co-operative line. The functioning of the dairy co-operatives is based on the collective action, which is supposed to be inclusive and participatory. It is assumed for assisting smallholders' engagement in milk markets, contributing to improvement in production and productivity and finally enhancing the farmers' income and welfare. Several studies have shown that integration with co-operatives have benefited the farmers and indeed have served as a catalyst for linking Indian dairy smallholders to the markets' domestic as well as global markets (Cunningham, 2009; Kumar, 2010; BIRTHAL *et al.*, 2007 and 2009 and Candler and Kumar, 1998). Dairy farming involves high market dependency and socio-economic values (Bor, 2014), wherein DCs help dairy farmers to vertically integrate to countervail power against oligopolistic powers in distribution and retailing (Van der Krogt *et al.*, 2007) by organizing dairy supply chains with better strategic logistics between production, processing and distribution (Berre *et al.*, 2014) in emerging markets (D'antoni and Mishra, 2012) and reducing financial risk and economic uncertainty faced by members in a mature market (Maynard, 2009) due to increasing volatility in milk and feed prices (Wolf and Widmar, 2014) and paying dairy farmers the milk price at levels that far exceeds market prices (Charlebois and Labrecque, 2009), when markets are volatile or even depressed (Yoo *et al.*, 2013) through democratic governance structure controlled by dairy farmers and managed by employees with appropriate skill sets, which

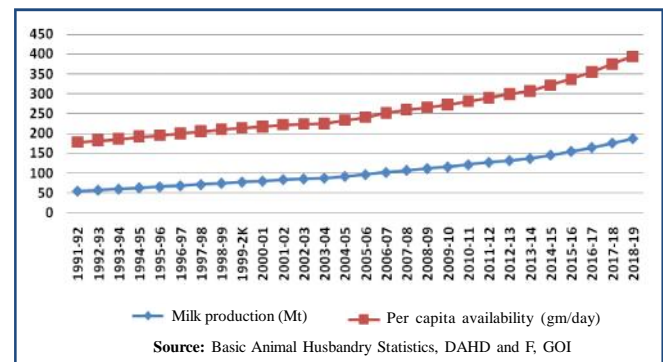


Fig. 1: Milk production and productivity of India (1991-2019 data)

help maximize returns and minimize costs of processing inputs, thereby reduce transaction costs (Labrecque *et al.*, 2015). National Dairy Development Board (NDDB) assisted dairy co-operative societies in order to strengthen their business operations and ensure maximum return to the producer members and increasing women's participation in various activities performed by the co-operatives.

### Problems and prospects of dairying in Eastern India:

After operation flood programme, even though India has stood self-sufficient in milk production, but milk production throughout the states in India is not uniformly distributed and therefore, there are huge demand and supply gap of milk and milk products in various other states of India. The situation is much direr in the northern and eastern parts of the country where the co-operative movement in milk production has not taken off. The erstwhile chairman of NDDB (Nandakumar) reiterated that, there was need for serious consideration to start the initiative 'Bringing White Revolution in Eastern India, and it was extremely important to develop these three states (*viz.*, Jharkhand, Chhattisgarh, Uttarakhand), where poverty was an issue, as dairy development would benefit the states socio-economically' (The Hindu, 2016).

The operation flood programme to replicate the Amul pattern has from the start - as the National Dairy Plan has done now - self-selected only "milk shed districts" with an extant tradition of profitable dairying. While the contribution of Amul pattern dairy co-operatives to making India the world's largest milk producer is widely recognized, their track record in fostering inclusive, pro-poor dairy development across the country has remained underwhelming. Successful dairy co-operatives today are all concentrated in the western corridor of India, from Punjab down to Kerala (Shah *et al.*, 2015). Also several reports highlighted that, the growth of co-operative dairying in some states like Gujarat, Maharashtra, Tamil Nadu and Karnataka has brought significant economic betterment and wellbeing of the rural population, as compared with other states (Benni, 2005).

The dairy sector in Eastern states of India is characterized by small-scale, scattered and unorganized milk-animal holders; low productivity; inadequate and inappropriate animal feeding and health care; lack of an assured year-round remunerative producer price for milk; an inadequate basic infrastructure for provision of production inputs and services; an inadequate basic infrastructure for procurement, transportation, processing and marketing of milk and lack of professional management. Also due to, limited access of the milk

**Table 1 : State-wise comparison of different aspects of dairying in Eastern India**

Sr. No.	Parameter	West Bengal	Bihar	Odisha	Jharkhand	Chhattisgarh
1.	Milk production – 2017-18 (in 000 tonnes)	5388.61	9241.50	2087.96	2015.62	1469.38
2.	Per capita availability – 2017-18 (in gram/day)	153	239	132	165	149
3.	Total number of villages (2011 Census)	40203	44874	51311	32394	20126
4.	No. of milk potential villages (% of total no. of villages)	13335 (33.17%)	23307 (51.94%)	5813 (11.33%)	4925 (15.20%)	3653 (18.15%)
5.	Number of organized dairy co-operative societies (DCS)	4024	21945	5852	614	1082
6.	No. of milch animal owning households (MAH) (in Lakh)	41.41	63.11	24.13	17.35	18.35
7.	Number of farmer members enrolled under DCS	258300	1138626	261325	36599	42000
8.	Average milk procurement by DCS (in TKgPD) (% of milk production)	188 (1.27%)	1603 (6.33%)	508 (8.88%)	121 (2.19%)	79 (1.96%)
9.	Chilling centres					
	Number	12	19	3	1	4
10.	Bulk milk cooler (BMC)					
	Capacity (TLPD)	117	274	80	10	69
11.	Processing plants					
	Capacity (TLPD)	164	367	390	61	60
11.	Processing plants					
	Capacity (TLPD)	279	1721	744	144	96
11.	Processing plants					
	Capacity (TLPD)	11	18	13	7	8
11.	Processing plants					
	Capacity (TLPD)	1257	2655	655	695	141

**Source:** GOI (2019). Bimonthly Report, September, 2019. State Dairy Profiles, Dairy Development Schemes. Department of Animal Husbandry and Dairying, Ministry of Fisheries, Animal Husbandry and Dairying, Govt. of India

producers to organized sector, lack of manufacturing facilities for value added products, inadequate chilling infrastructure at village level, unregulated milk marketing and inefficient cold chain distribution network were the major problems identified in the state. Some extrinsic problems (like lack of feed and fodder for livestock, poor quality animals and poor provision of animal health services, poor access to inputs and markets etc.) and intrinsic problems (like inadequate knowledge, motivation, skill and confidence to invest on commercial dairy farming, fears about the exploitation and/or corruption, social insecurity and conflicts within society) were the major problems prevailing in dairy sector of the state (Deka and Wright, 2011).

The 19<sup>th</sup> livestock census indicated that though, Chhattisgarh and Jharkhand had 7 per cent of India's bovines but produced less than 1 per cent of India's milk output. Jharkhand dairy co-operatives procured only 20,000 litres/ daily (l/d) locally but imported 6,00,000 l/d from other states to meet local demand (The Hindu, 2014). The NDDDB report also highlighted that, of four major states of Bihar, West Bengal, Jharkhand and Orissa, the state of Jharkhand didn't had any union for procurement, though there were three marketing dairies, created under operation flood. Jharkhand is co-operatively, the most backward state of the country. At present, the Jharkhand state is ranked 17<sup>th</sup> in the position both in terms of milk production as well as milk productivity (GOI, 2019). On the other hand Bihar, with an annual production of 9.8 million tonnes (NDDDB, 2018-19) and a national share of 5.2 per cent, is among the top 10 milk producing states in India, with surpluses for export to other states and abroad. This positive development is based on a strong traditional dairy sector where milk output from local cows and buffaloes may not be the highest, but where local dairy know-how sound and skills fuel milk production as well as cottage dairy processing (Rao *et al.*, 2014). On the contrary, Odisha

state does not contribute significantly to milk production in India. With only 1.7 per cent of the dairy cow population and 0.4 per cent of the buffalo population in 2002, milk production in Odisha contributed only 1.1 per cent to the milk produced in India. Most of the milk in Odisha is produced on farms with marginal to small landholdings, less than 2 hectares and with 3 or 4 animals. (Saha *et al.*, 2004). Even by Indian standards, milk yields in Odisha is extremely low (1/4 of the Indian average). The per capita milk availability in Odisha is very low at 145 g/day while the annual milk production is 2.3 million tonnes. Notably, its neighboring state Chhattisgarh state produces 1.1 million metric tonnes of milk annually. The per capita availability of milk in Chhattisgarh stood at 133 grams per day during 2018-19 (NDDDB, 2018-19). As in rest of the Eastern India, in West Bengal too the milk co-operatives play a major role in the dairy development programme. There are a number of primary milk producers co-operative societies at the village level that, in conjugation, form milk union in the district level. These district level dairy co-operative unions carry out several activities beneficial and necessary for milk producers' socio-economic development. These dairy co-operative unions procure, process and market milk and milk products and help the milk producers to develop and grow. All the district co-operative milk producers unions in West Bengal are affiliated to the West Bengal Milk Federation. It guides and monitors the milk unions to implement the Operation Flood Project. Milk and milk products traditionally form an important part of the average Bengali diet. However, both the productions of milk and its processing are largely restricted to households and to the cottage industry sector. West Bengal has a large market for milk based sweets and an untapped potential to increase its production through the co-operative network. The state produces milk to the tune of 5.6 million tonnes with the per capita availability of

**Table 2 : Average daily milk procurement of different dairy co-operatives brands in Eastern India**

Sr. No.	Milk co-operative federation in Eastern India	Brand name	Avg. daily milk procurement (LLPD)
1	Bihar State Co-operative Milk Producers' Federation Ltd. (COMFED)	Sudha	20.85
2	West Bengal Co-operative Milk Producers Federation Ltd. (WBCMPF)	Benmilk	3.35
3	The Orissa State Co-operative Milk Producers' Federation Ltd. (OMFED)	OMFED	6
4	Chhattisgarh State Co-operative Dairy Federation Ltd. (CGCDF)	Devbhog	0.8
5	Jharkhand State Co-operative Milk Producers' Federation Ltd. (JMF)	Medha	1.25

158g/day (NDDB, 2018-19).

### Conclusion:

Dairying in Eastern states of India has immense potential for ushering white revolution in India. As rich bovine genetic resources, especially the indigenous cattle and buffalo present in these states, milk production and productivity can be harnessed by proper breeding interventions for obtaining quality milk breeds. The availability of water resources through rivers in most of the Eastern states makes it conducive for round the year production of fodder. Also, the sufficient availability of grazing and pasture land can also supplement the fodder requirements of the animals. With a view to give impetus to dairy development; government of India has initiated various initiatives in these states viz., National Programme for Dairy Development, National Dairy Plan, Dairy Processing and Infrastructure Development Fund. However, the potential of dairy sector in Eastern India is yet to be tapped, therefore, with the collaboration of Govt. Animal Husbandry and Dairy Department, SAUs other stakeholders like policy makers, the dairy scenario of these states in Eastern part of India can be leveraged to large extent.

Authors' affiliations :

**Ritu Chakravarty**, Dairy Extension Division, National Dairy Research Institute, Karnal (Haryana) India (Email: ritu.chakravarty@rediffmail.com)

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