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The Changing Economics of Dairy: Productivity, Value Creation and Affordability

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It is about making dairying more productive, economically viable and capable of meeting India's growing nutritional needs without compromising affordability

India is the world's largest producer of milk, accounting for nearly a quarter of global production. In 2024–25, the country produced approximately 248 million metric tonnes of milk, translating into per capita availability of 485 grams per day. An extraordinary achievement by any measure.

Yet, beneath these impressive numbers lies a paradox that could define the next decade of Indian dairy.

India's leadership in milk production has been built substantially on the size of its livestock population rather than productivity per animal. And as demographics change, consumer demand accelerates and farm-level costs rise, the economic foundations of this model are coming under increasing pressure.

The challenge is no longer simply about producing more milk. It is about making dairying more productive, economically viable and capable of meeting India's growing nutritional needs without compromising affordability.

The productivity paradox

An indigenous Indian cow produces approximately 4–5 kilograms of milk per day, while a non-descript cow averages even less. Crossbred cows perform better but still remain far below productivity levels in developed dairy economies. In the United States, dairy cows average around 30 kilograms per day, while Israel achieves even higher yields.

Admittedly, these are different production systems, with significant variations in climate, breeds, feed availability and farm economics. Nevertheless, the productivity gap is striking.

For millions of Indian rural households, cattle ownership is intertwined with agricultural livelihoods, cultural traditions and household nutrition. Dairying has historically been a supplementary source of income rather than a specialised commercial enterprise. Indigenous and non-descript breeds, while often better adapted to local conditions, generally produce modest quantities of milk.

This explains why *marketable surplus* is so central to Indian dairy economics.

Of the approximately 239 million tonnes of milk produced in 2023–24, an estimated 37% was retained at the producer level, leaving around 150 million tonnes as marketable surplus. Of this, only about 47 million tonnes were handled by the organised sector, comprising cooperatives, producer institutions and private companies.

Yet, within this organised ecosystem, a different dairy economy has progressively emerged.

Reliable procurement, improved breeds, scientific feeding practices, veterinary services and stronger farmer-market linkages have made dairying an increasingly important commercial activity for many producer households.

Productivity is not merely a function of the animal. It is an outcome of the entire ecosystem supporting the farmer. National averages, while useful, often conceal these differences in farming practices, commercial orientation and economics.

The demographic challenge we are not talking enough about

There is another structural shift underway with profound implications for Indian dairy: urbanisation.

In 1951, nearly 83% of India's population lived in rural areas. By 2001, that proportion had fallen to 72%, and by 2011, to 69%. Projections suggest that 40–44% of India's population could be living in urban centres by 2036.

The economic transformation has been even more pronounced. Agriculture and allied activities, which contributed more than half of India's national income in the early years after Independence, now account for approximately one-fifth. Urban areas have become the dominant engines of economic growth.

This transformation extends beyond metros. Cities are engulfing adjoining rural landscapes, peri-urban settlements are becoming part of larger urban agglomerations, and villages are evolving into towns and emerging economic centres.

What does this mean for dairying?

India's milk production model was built around millions of rural households maintaining a few animals. But as younger generations pursue alternative livelihoods, land use changes and labour becomes more expensive, the incentives to maintain small dairy herds can weaken.

The assumption that millions of rural households will continue producing milk simply because they have done so for generations may no longer hold.

While urbanisation does not automatically translate into fewer dairy farmers, even modest attrition in the traditional production base, if not offset by higher productivity and new commercial capacity, could progressively constrain supply.

Ironically, the same urbanisation that creates more consumers with rising incomes and greater demand for dairy could weaken the traditional production base supplying them.

India's dairy challenge is no longer just about producing more milk from every animal. It is increasingly about ensuring that enough economically viable farmers are willing to produce milk in the first place.

This calls for a deliberate effort to develop a new generation of dairy entrepreneurs, operating scientifically managed, commercially viable farms. Not necessarily large farms, but farms productive and profitable enough to make dairying an attractive livelihood.

A widening supply-demand imbalance

Since the pandemic, India's dairy sector has faced successive setbacks. Disruptions to breeding and artificial insemination services affected reproductive cycles. Lumpy skin disease caused significant distress among cattle populations. Erratic monsoons, prolonged dry spells and increasing heat stress have affected fodder availability, animal health and milk yields.

Meanwhile, rising incomes, nutritional awareness and the growing adoption of packaged dairy have sustained demand, particularly in categories such as curd, paneer, buttermilk, yogurt and high-protein products.

India's milk production growth moderated to 3.58% in 2024–25, compared with an average annual growth rate of approximately 5.7% over the preceding decade. While national production continues to grow, incremental milk availability has not always kept pace with expanding organised dairy markets.

Compounding this imbalance is the growing pressure on farm-level economics.

Feed and fodder constitute a substantial proportion of dairy farming costs. Maize, de-oiled rice bran, oilseed cakes and other feed ingredients have experienced significant volatility over the past five years.

Consider a scenario where milk procurement prices increased at a CAGR of 4.5% between 2021 and 2026, representing a cumulative increase of approximately 25%. Against this, important feed ingredients have experienced periods of substantially higher inflation. Industry reports in September 2026 indicated cattle-feed costs around 15–20% above the corresponding period of the previous year.

When rising feed costs coincide with declining yields, reproductive inefficiencies or disease-related losses, higher procurement prices do not necessarily translate into better incomes.

A higher milk price does not necessarily mean a more prosperous dairy farmer. What matters is the cost of producing every litre, and the income generated by every productive animal.

Without productivity improvements, higher milk prices become a compensating mechanism rather than a sustainable solution, eventually putting pressure on consumer affordability.

Unlocking more value from the milk we already produce

Alongside increasing production, India must improve how effectively existing milk output reaches consumers.

Milk flows through producing households, informal markets, traditional dairy processing and organised businesses. Household consumption surveys capture only part of this complex ecosystem, and the difference between measured household consumption and national per capita availability cannot simply be interpreted as wastage.

Nevertheless, fragmented collection, inadequate chilling, inefficient transportation and inconsistent handling can create avoidable losses and erode economic value.

At India's production scale, even a hypothetical 5% improvement in effective milk utilisation would represent more than 12 million tonnes annually. This illustrates the magnitude of the opportunity, rather than an estimate of actual recoverable wastage.

Every litre of milk saved from avoidable losses creates additional usable supply without requiring another animal to be fed or maintained.

Investments in village-level aggregation, quality testing, chilling, logistics and efficient processing therefore deserve the same attention as expanding milk production.

From producing more milk to creating more value per litre

The second major opportunity lies in creating greater economic and nutritional value from milk.

Liquid milk will remain fundamental to Indian households. However, the industry's long-term growth cannot depend exclusively on its economics.

Curd, paneer, buttermilk, yogurt, cheese, butter, ghee and emerging high-protein products offer opportunities to serve evolving consumer needs. India has considerable headroom: a substantial majority of curd consumption remains homemade, while packaged paneer represents only a small proportion of total household consumption.

Importantly, value creation should not be confused with premiumisation alone.

A hygienically packaged buttermilk, a convenient serving of paneer, a protein-rich yogurt or a differentiated ghee creates value through nutrition, convenience, functionality, quality or consumption experience.

Nor is value creation simply about higher selling prices. It is about generating greater economic contribution from milk after accounting for processing, packaging, distribution and associated costs.

A dairy industry that creates greater value per litre can reinvest more in innovation, quality, infrastructure, distribution and farmer development, strengthening consumer preference and supporting sustainable milk demand.

The next phase of dairy growth must therefore be measured not only by how many more litres we produce, but by how much more value we create from each litre.

A new policy framework for India's next dairy revolution

India's cooperative movement and public investment have played a historic role in transforming rural livelihoods. But the next phase requires a broader, more inclusive and commercially oriented framework.

With more than eight crore farmers dependent on dairy, interventions must extend far beyond isolated programmes or individual institutional networks.

First, animal productivity must become a national economic priority. Scientific breeding, balanced nutrition, reproductive efficiency, preventive healthcare and climate-resilient fodder systems need sustained investment.

Genetic improvement should combine the climatic adaptability and disease resilience of suitable indigenous breeds with higher productivity and efficient feed conversion. The objective is not merely an animal producing more milk, but one producing milk more economically under Indian conditions.

Second, India must foster a new generation of entrepreneurial dairy farmers. Affordable long-term finance, scientific farm management, practical knowledge transfer and reliable market linkages can make small and medium dairy farms commercially viable.

The focus must shift from increasing animal numbers towards improving productive capacity and income per farm.

India does not need only more productive cattle. It needs more profitable dairy farms.

Third, dairy development must embrace wider public-private participation.

In 2023–24, cooperatives accounted for approximately 26 million tonnes of the 47 million tonnes handled by the organised sector. Other organised institutions, including private dairies, handled the remaining 21 million tonnes.

Yet many public dairy-development initiatives continue to emphasise the cooperative channel. There is a strong case for broader, outcome-based participation by private dairies in farmer development, scientific breeding, veterinary services, extension programmes and productivity improvement.

After all, **the economics of a dairy farmer do not depend on whether the milk is procured by a cooperative or a private company.**

Existing programmes enabling private participation offer a foundation for greater collaboration, with common accountability standards and measurable improvements in farmer productivity and incomes.

Finally, policy must recognise changing rural demographics. Protecting existing production capacity while encouraging new commercially viable farms will require coordinated efforts in financing, infrastructure, research, farmer education and entrepreneurship development.

Redefining the economics of dairy

India's dairy industry is entering a phase where balancing farmer prosperity, industry sustainability and consumer affordability will become increasingly complex.

Farmers need remunerative incomes. Dairy companies need viable operations and investment capacity. Consumers need safe, nutritious products at affordable prices.

These are not competing objectives, but interconnected outcomes of the same economic system.

The solution cannot lie indefinitely in higher procurement prices compensating for weak farm economics, or passing every cost increase on to consumers.

It must lie in higher productivity per animal, commercially viable dairy farms, stronger market linkages, more efficient supply chains and greater value creation from every litre of milk.

India's first dairy revolution was built on the collective strength of millions of rural producers. The next must combine that inclusive foundation with scientific productivity, entrepreneurial farming, modern infrastructure and consumer-led innovation.

India has already demonstrated its ability to become the world's largest milk producer. The next dairy revolution will be defined not by how much more milk we produce alone, but by how productively we produce it, how intelligently we create value from it, and how affordably we make its nutritional benefits accessible to every household.