India's Dairy Sector: Significance and Challenges (Explained Pointwise)ss

National Milk Day, observed on 26 November, commemorates the birth anniversary of Dr. Verghese Kurien, widely known as the "Father of the White Revolution."

India is the world's largest milk producer, accounting for nearly one-fourth of global output.The dairy sector significantly boosts the rural economy, contributing around 5% to the national GDP and providing livelihoods to over 8 crore farmers, with women playing a crucial role in production, processing, and milk collection.

What is the current status of dairy sector in India?

Milk Production Data	India is the world's leading milk producer. The milk production surged from 146.30 million tonnes in 2014–15 to 239.30 million tonnes in 2023–24. The per-capita availability of milk in India has risen to 471 grams per day in 2023-24 compared to a global average of about 329 g/day.
Milk Sector contribution to Agri GDP	The milk sector (milk consumed or sold in liquid form, ghee, butter, and lassi produced by producer households) contributed almost 40% (Rs 11.16 lakh crore) to agriculture and related sectors.
Top Five Milk producing states in India	The top five milk-producing states- Uttar Pradesh, Rajasthan, Madhya Pradesh, Gujarat, and Andhra Pradesh– contribute over 53% of the country's total milk production.
National Average Yield and production data	The national average yield is 8.55 kg per animal per day for crossbred animals and 3.44 kg for indigenous ones. Indigenous buffaloes account for 31.94% of production, followed by crossbred cattle at 29.81%.
Handling of milk	The organized sector, led by cooperatives, manages about one-third of the marketable milk. The unorganized sector handles the remaining two-thirds.

Cooperative Dairy Network in India & Government Roadmap for White Revolution 2.0

Cooperative dairy network includes 22 milk federations, 241 district unions, 28 marketing dairies, and 25 MPOs, connecting 1.72 crore farmers in 2.35 lakh villages, supported by 31,908 cooperatives, 61,677 milk testing labs.

White Revolution 2.0, launched in 2024–25, represents a renewed commitment to strengthen India's dairy cooperatives, expand milk procurement, and enhance women's participation in the sector. Over the five-year period until 2028–29, the initiative aims to:

- Establish 75,000 new dairy cooperative societies in underserved areas.
- Strengthen 46,422 existing dairy cooperatives to improve service delivery and farmer incomes.
- Expand multi-state cooperative societies for cattle feed, mineral mixtures, biofertilizer, biogas, and sustainable management of animal by-products.

- Increase milk procurement by cooperatives to over 1,007 lakh kilograms per day.

Infrastructure development is a core component, with new plants such as the Sabar Dairy in Rohtak, Haryana, catering to Delhi-NCR's demand and enhancing production of curd, buttermilk, and yoghurt. Large-scale investments in milk processing and chilling capacity aim to raise India's milk processing to 100 million litres per day by 2028–29.

What is the Significance of the Dairy Industry in India?

1. Backbone of Rural Economy:- Dairy contributes about 5% of India's GDP and 40% of agriculture and allied sector output (₹11.16 lakh crore), supporting the livelihoods of over 8 crore farmers, especially small and marginal landholders.

2. Ensures Nutritional Security:- With per capita milk availability at 471 grams/day, milk provides high-quality protein, calcium, magnesium, and Vitamin B12, helping combat malnutrition, anemia, and stunting, particularly among children and women.

3. Promotes Women Empowerment:- Women make up 70% of the dairy workforce and lead 48,000+ cooperatives and 16 all-women Milk Producer Organisations (MPOs), giving them income, independence, and decision-making power in rural areas.

4. Supports Integrated & Climate-Friendly Farming:- India's livestock—303.76 million bovines, 148.88 million goats, and 74.26 million sheep—provides manure for crops and biogas for energy. Programs like Gobar-Dhan and bio-CNG turn cattle waste into organic fertilisers and renewable energy, adding income for farmers.

5. Encourages Sustainability & Circular Economy:- Dairy reduces reliance on chemical fertilizers, promotes waste-to-wealth practices, lowers emissions, and supports rural entrepreneurship, contributing to both environmental and economic resilience.

6. Future Growth under White Revolution 2.0:- Milk procurement by cooperatives is set to increase from 660 lakh litres/day to 1,007 lakh litres/day by 2028–29, focusing on higher production, women's participation, nutritional security, and better market access for farmers.

What are the challenges in the Dairy Industry?

1. Low Scientific Breeding Coverage: Only 33% of breedable bovines undergo artificial insemination (AI), while 70% are bred with scrub bulls of unknown genetic merit. Limited AI use, low-quality germplasm, and shortage of technical staff hinder high-quality cattle development.

2. Disease Threats: Contagious diseases like Foot-and-Mouth Disease (FMD), Brucellosis, Lumpy Skin Disease (LSD), and Black Quarter infections continue to reduce livestock productivity. Mass vaccination and eradication programs under the National Animal Disease Control Programme aim to control these diseases by 2030.

3. Infrastructure Gaps: Many rural areas still lack access to organized milk markets, chilling centers, and quality-testing laboratories. Cooperative coverage is uneven—well-established in Gujarat and Kerala but below 10% in West Bengal, Assam, and Jharkhand—limiting uniform sector growth.

4. Feed and Fodder Shortages: Seasonal fodder scarcity affects milk yield. India faces a deficit of 12% green fodder, 23% dry fodder, and 30% grains-based concentrate feed.

5. Low Cattle Productivity and State Variability: Average cattle productivity is 1,777 kg per animal per year, below the global average of 2,699 kg. Punjab achieves 13.49 kg per animal per day, while West Bengal only 6.30 kg.

6. Market Volatility: Fluctuating milk prices, rising input costs, and competition from the unorganized sector reduce farmers' incomes. Limited marketing support, absence of price stabilization, and a small share of livestock in agricultural credit (around 4%) further constrain economic security.

7. Declining Growth Rate: Annual milk production growth has slowed from 6.47% in 2018–19 to 3.83% in 2022–23, which may affect the objectives of White Revolution 2.0.

8. Policy and Technology Gaps: Agricultural subsidies mainly favor crops; in 2023–24, only Rs 4,328 crore was allocated to the Department of Animal Husbandry and Dairying compared to over Rs 4 trillion for other agricultural subsidies. Insufficient institutional finance and low adoption of modern breeding technologies limit sector growth.

What are the other government schemes & initiatives for the development of dairy sector?

Rashtriya Gokul Mission (RGM)	It is being implemented for development and conservation of indigenous bovine breeds since December 2014. Its aim is to enhance milk production and to make it more remunerative to the farmers.
National Programme for Dairy Development (NPDD)	Focuses on infrastructure development, milk testing, chilling facilities, and cooperative strengthening. Over 31,000 dairy cooperatives have been revived, benefiting more than 17 lakh milk producers
National Livestock Mission (NLM)	National Livestock Mission (NLM) scheme has been restructured for 2021-22 to 2025-26. The scheme focuses on entrepreneurship development and breeds improvement in poultry, sheep, goat and piggery, including feed and fodder development.
National Artificial Insemination Programme	To suggest novel methods of bringing about impregnation in female breeds and prevent the spread of certain diseases which are genital in nature.
National Cattle and Buffalo Breeding Project	To genetically upgrade important indigenous breeds on a priority basis with a focus on development and conservation.
National Animal Disease Control Programme	Implemented to control FMD and Brucellosis by completely vaccinating cattle, buffalo, sheep, goat and pig populations against Foot & Mouth Disease (FMD) and bovine female calves of 4-8 months of age against Brucellosis.
Animal Husbandry Startup Grand Challenge	To appreciate innovations coming from the villages to expand the dairy sector in India.
GST Reforms	The 56th GST Council reduced GST rates on key dairy products, effective from 22 September 2025. UHT milk and packaged

	paneer are now tax-free, while ghee, butter, cheese, milk products, ice cream, and milk cans saw GST reduced to 5%.
National Gopal Ratna Awards	The National Gopal Ratna Awards recognize outstanding dairy farmers, cooperatives, and AI technicians for their contribution to livestock and dairy development. The 2025 awards, to be presented on 26 November, include cash prizes of ₹5 lakh, ₹3 lakh, and ₹2 lakh for the top three winners

What Should be the Way Forward?

1. Expansion of Cooperatives: Achieving White Revolution 2.0 targets by establishing 75,000 new societies will bring underserved areas into the organized sector, reducing reliance on informal middlemen.

2. Enhancing Scientific Breeding: Increasing AI coverage, promoting progeny-tested bulls, and adoption of advanced technologies such as IVF and sexed semen will strengthen productivity.

3. Infrastructure Modernization: Scaling up milk processing plants, chilling centers, and quality-testing laboratories will improve efficiency, reduce wastage, and support uniform growth across states.

4. Climate-Smart Practices: Adoption of sustainable feed production, organic manure, biogas generation, and circular economy models will mitigate environmental risks and reduce the sector's carbon footprint.

5. Feed and Fodder Security: Ensuring adequate availability of green and dry fodder, grains, and drinking water is essential, particularly in regions with seasonal scarcity, to enhance milk yields and livestock health.

6. Insurance and Credit Support: Expanding livestock insurance coverage and providing easy access to short-, medium-, and long-term credit will buffer farmers against market volatility and climatic uncertainties.

7. Capacity Building and Training: Continuous skill development for AI technicians, cooperative staff, and farmers will facilitate adoption of modern practices and ensure knowledge transfer.

8. Value Addition and Marketing: Supporting milk producers to enter value-added segments such as ice cream, yogurt, cheese, and whey will significantly improve profit margins compared to raw milk sales.

9. Promoting Indigenous Breeds: Conserving and genetically enhancing native breeds, like the Badri cow, can improve productivity while maintaining resilience to local climatic conditions.

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