

## 5. Fastest-Growing Dairy Producer – Economy

India's dairy sector has expanded by 70% in the past 11 years, with milk production rising from 146 million tonnes in 2014–15 to 239 million tonnes in 2023–24.

### Dairy Sector of India

**Global Significance** – India is the largest milk producer in the world, accounting for 24.76% of global milk output. The country has overtaken traditional dairy leaders due to rapidly increasing production, cooperative structures, and inclusive policies. India's dairy sector serves as a model for livestock-based rural development globally.

**Economic Contribution** – Dairy is India's single largest agricultural commodity, contributing approximately 5% of India's GDP. It employs over 8 crore farmers, providing income security and livelihood opportunities across rural India. Livestock and dairy activities serve as a supplementary income source for marginal and small farmers, reducing dependence on crop yields.

**Growth Performance** – The livestock sector grew at a Compound Annual Growth Rate (CAGR) of 7.9% between 2014–15 and 2020–21, outpacing overall agricultural growth. Per capita milk availability rose to 471 grams/day in 2023–24, significantly above the world average of 322 grams/day, indicating improved nutrition security. Top milk-producing states include Uttar Pradesh, Rajasthan, and Madhya Pradesh, which contribute significantly to national output.

### Key Enablers of India's Dairy Success

**Institutional Support** – National Dairy Development Board (NDDB), established in 1965 at Anand, aimed to replicate the Amul cooperative model nationwide.

**Operation Flood (1970)** – The initiative transformed India into the world's largest milk producer by creating a nationwide cooperative network for milk procurement, processing, and marketing. NDDB was recognized as an Institution of National Importance in 1987 by an Act of Parliament, reflecting its strategic role in rural development and food security.

**Growth in Bovine Productivity** – India has 303.76 million bovines, forming the backbone of its dairy sector. Between 2014 and 2022, bovine productivity increased by 27.39%, the highest globally, surpassing major dairy nations like China, Germany, and Denmark. This productivity growth was supported by improved breed management, scientific feeding, and veterinary interventions.

### Cooperative Network

India's dairy cooperatives operate through a robust infrastructure, including –

1. 22 milk federations
2. 241 district cooperative unions
3. 28 marketing dairies
4. 25 Milk Producer Organisations (MPOs)

These institutions facilitate procurement, quality control, price stabilization, and market linkages for rural producers.

**Contribution of Women** – Women constitute nearly 70% of the dairy workforce, with 35% actively participating in cooperatives. Their engagement has promoted inclusive growth, empowerment, and financial independence, especially in rural areas. Women's role has been central to the success of the cooperative and household-based dairy model.

### Structural Weaknesses in Indian Dairying

**Breed Productivity Gaps** – Despite growth, milk yields lag behind advanced dairy nations, particularly among indigenous breeds.

Average yield of **Indian cows** – 1.64 tonnes/year

Average yield in **EU** – 7.3 tonnes/year; in **US** – 11 tonnes/year

**Land and Fodder Constraints** – Unlike New Zealand or Australia, India lacks abundant pasture land, forcing farmers to rely on crop residues and purchased feed, increasing production costs.

**Dependence on Cheap Labour** – Dairy farming remains labour-intensive, involving feeding, milking, cleaning sheds, and bathing cattle. The model largely depends on unpaid family labour, with minimal

opportunity cost, making productivity gains challenging.

**Climate Impact and Market Volatility** – Extreme heat, erratic rainfall, and climate stress reduce yields and increase operational costs. Milk and dairy product prices remain volatile, affecting small producers' incomes.

**Slowing Growth** – Dairy production growth has slowed to 3.78% in 2023–24, with buffalo milk output declining by 16%, signaling challenges in sustaining earlier momentum.

**Post-Harvest Losses** – Inadequate cold-chain, storage, and processing infrastructure lead to significant milk wastage, reducing profitability and efficiency.



## Concluding Remarks

India's dairy sector is the backbone of rural livelihoods and a symbol of inclusive, farmer-led growth. The country has combined cooperative structures, women's participation, and scientific interventions to achieve global leadership in milk production. With the momentum of the White Revolution 2.0, India is poised to –

1. Boost productivity through improved breeds and fodder management
2. Expand opportunities for women and smallholder farmers
3. Enhance infrastructure for storage, processing, and cold chains
4. Continue transforming rural prosperity and income security

Sustaining global leadership will require addressing productivity gaps, climate challenges, labour constraints, and infrastructure weaknesses, while building on the successful cooperative framework that has driven decades of growth.

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