



Why is India, the World's Top Milk Producer, Not a Major Exporter?

Layasri S, A P SriVidhya and * J Paul Mansingh

VIT School of Agricultural Innovations and Advanced Learning (VAIAL),

Vellore Institute of Technology, Tamil Nadu, India

*Corresponding Author's email: paul.mansingh@vit.ac.in

Today India stands tall as the world's largest producer of milk, contributing nearly a quarter of global output and feeding hundreds of millions of households every day. It is ultimately due to the success of white revolution and the cooperative movement which resulted in the transformation of milk-deficient nation into dairy-powerhouse. This makes the milk not only the source of nutrition but also a symbol of rural livelihood security. Despite this abundance, India plays a minor role in the international dairy trade, accounting less than one percent of global exports.

India's rise as the World's Dairy leader

India became the world's top milk producer largely due to white revolution which is also known as “**Operation Flood**”, launched on 13 January 1970 by Dr. Verghese Kurien. India has been the world's largest milk producer since 1998, so it has held in first place for about 27 years (1998-225). At the time of independence, the country was milk-deficient and relied on imports. The spearhead focused on enhancing dairy farming and rural incomes through National Dairy Development Board and got inspired by Amul's cooperative model (Figure 1). This was achieved by increasing milk production, improving its quality, and ensuring fair prices for both producers and consumers. They organized farmers into milk cooperatives, built a national milk grid with chilling and transport facilities and promoted better breeds and veterinary care. India stands 1st in production with almost 31% of global production but it ranks 48th position in milk export with only generating \$52,410,00 (Table 1).

Table 1. World milk production vs exports

Rank (in production)	Country	Total production (in million metric tons)	Rank (in export)	Country	Milk exports (in \$'000)
1	India	211.7	1	New Zealand	6,905,289
2	European union	150.17	2	Germany	3,300,760
3	United States	102.45	3	Netherland	3,140,840
4	China	41.63	4	United States	2,330,677
5	Russia	34.07	5	Belgium	2,297,407

Data source:

<https://www.worldstopexports.com/top-milk-exporting-countries/>

<https://www.fas.usda.gov/data/production/commodity/0223000>

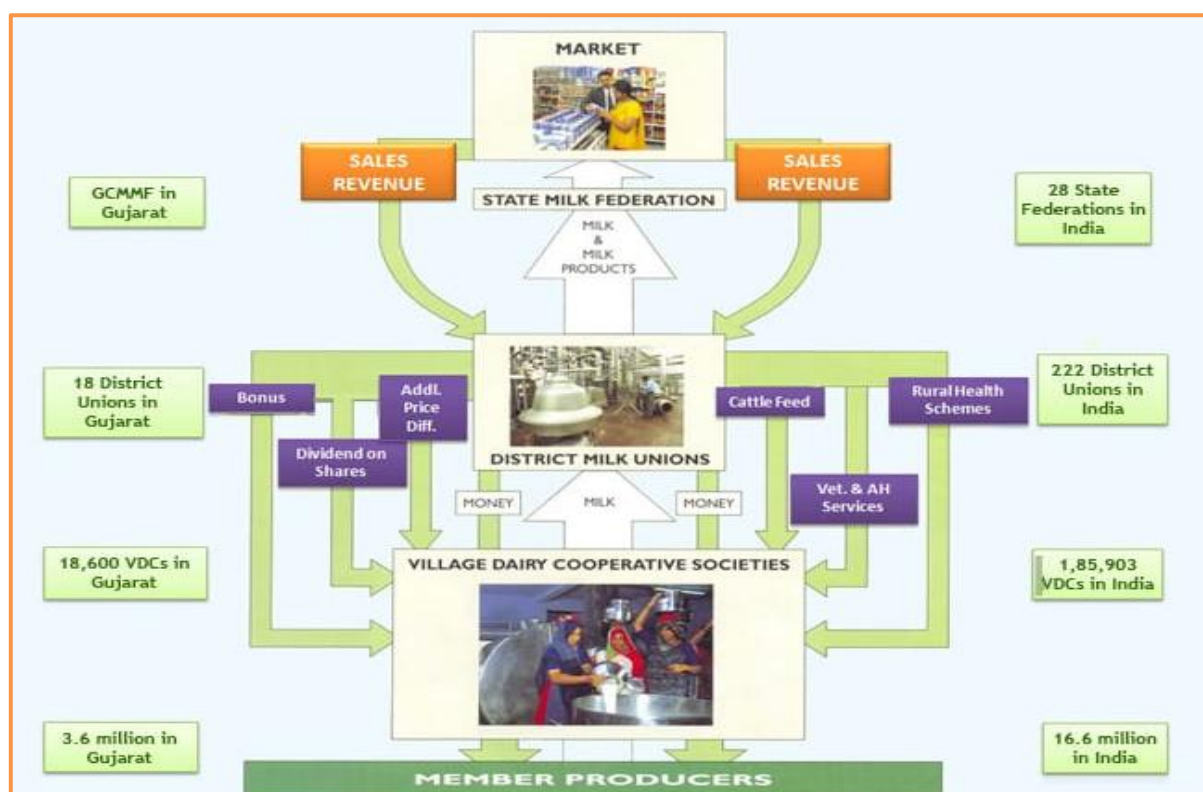


Figure 1. National Dairy Development Board and got inspired by Amul's cooperative model (Source: <https://amul.com/m/about-us>)

Indian government has implemented supporting schemes for milk production to boost milk production while supporting and uplifting farmer's livelihood, and strengthen overall wealth (Table 2).

Table 2. Schemes in India for Milk Production

S.No.	Scheme Name	Year	Objective
1	Operation Flood	1970	To create a nationwide milk grid and make India the world's largest milk producer.
2.	National Project for Cattle and Buffalo Breeding (NPCBB)	2000	To improve the productivity of cattle and buffalo through scientific breeding practices.
3.	National Programme for Dairy Development (NPDD)	2014	To modernize and strengthen the infrastructure for milk procurement and processing.
4.	Rashtriya Gokul Mission (RGM)	2014	To conserve and develop indigenous bovine breeds and enhance their genetic potential.
5.	Dairy Processing and Infrastructure Development Fund (DIDF)	2017	To upgrade dairy processing infrastructure and create new plants by providing low-interest loans.
6.	Supporting Dairy Cooperatives & Farmer Producer Organizations (SDCFPO)	2017	To provide financial assistance to dairy cooperatives and FPOs to improve their operations and efficiency.
7.	Animal Husbandry Infrastructure Development Fund (AHIDF)	2020	To encourage private investment in dairy processing and other animal husbandry infrastructure.

Data Source: <https://dahd.gov.in/schemes-programmes>

Similarly the state government of Tamil Nadu has implemented some schemes to improve milk production and the livelihood of farmers by providing with financial support (Table 3).

Table 3. Schemes in Tamil Nadu for Milk Production

S.No.	Scheme	Year	Objective
1	Tamil Nadu Milch Cow Distribution Scheme	2011	To improve the livelihood of poor beneficiaries by providing free milch cows.
2	Milch Animal Loan Scheme (TABCEDCO)	Ongoing	To provide low-interest loans for individuals from backward classes to purchase milch animals.
3	Aavin Infrastructure Development	Ongoing	To continuously modernize and expand the state's cooperative dairy infrastructure under the Aavin brand.

Data Source: https://agritech.tnau.ac.in/govt_schemes_services/govt_serv_schems_nadp_tn_13.html

Before and After White Revolution Statistics

In 1950-51, India produced approximately 17 million tonnes of milk annually. By 1968-69 (just before operation flood), production was around 21.2 million tonnes. Per capita availability of milk has declined to just 107g/day by early 1970s. Late there was a drastic increase in milk production which has now lead to have 239 million tonnes in 2023-24. Corresponding per capita availability rose to approximately 471g/day (Figure 2).

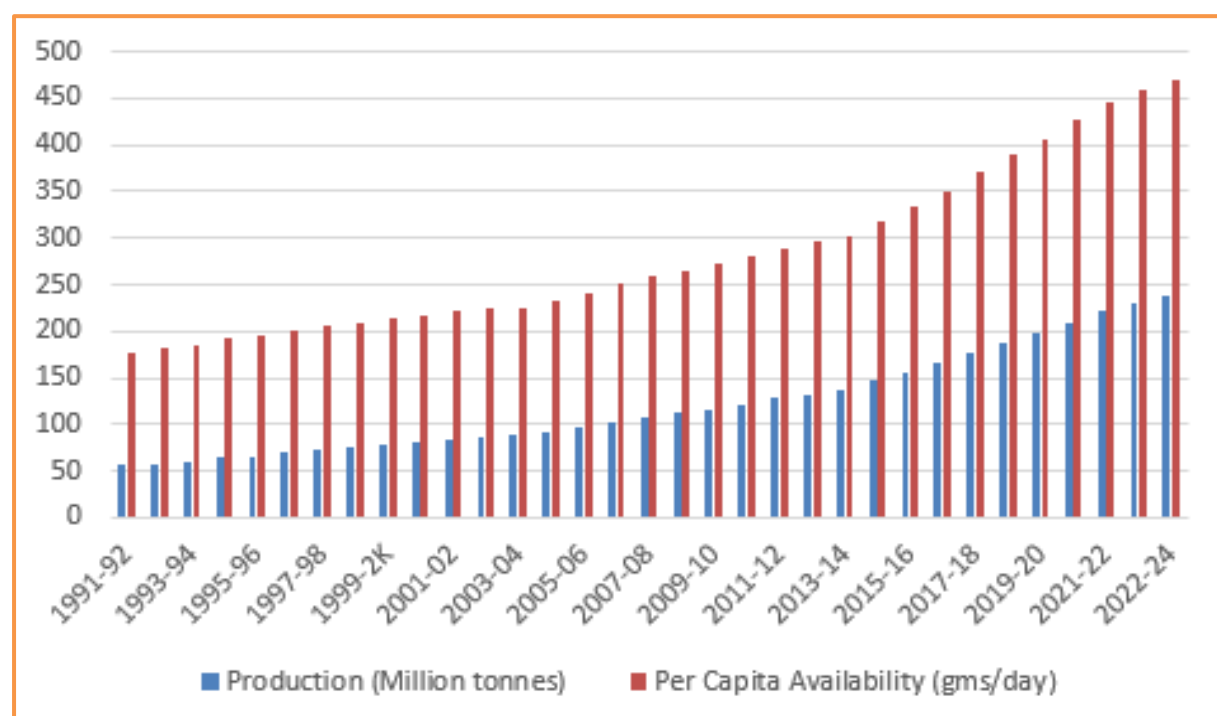


Figure 2. Milk Production and per capita availability in India

Image Source: Author's Compilation (2025), Data Source: <https://www.nddb.coop/information/stats/milkprodindia>

The Export Paradox

Despite its remarkable outputs, India's share in global dairy exports remains disproportionately low. Exports totaled only around 64,000 tonnes in 2023-24, valued at \$273 million approximately. Though the Recommended Dietary Allowance (RDA) for milk is only 150-180 g/day for adults, Indians consume more than the world per capita consumption and also than what they actually need. The typical export mix includes bulk items like milk powder and ghee; however, value-added products (like cheese or whey) remain limited. India's export of dairy product has a steady increase from 2021. In 2021-22 India has

exported to countries like Bangladesh, U.A.E. Bahrain, Malaysia, Saudi Arabia with total export of 108,711 MT of dairy products (Figure 3).

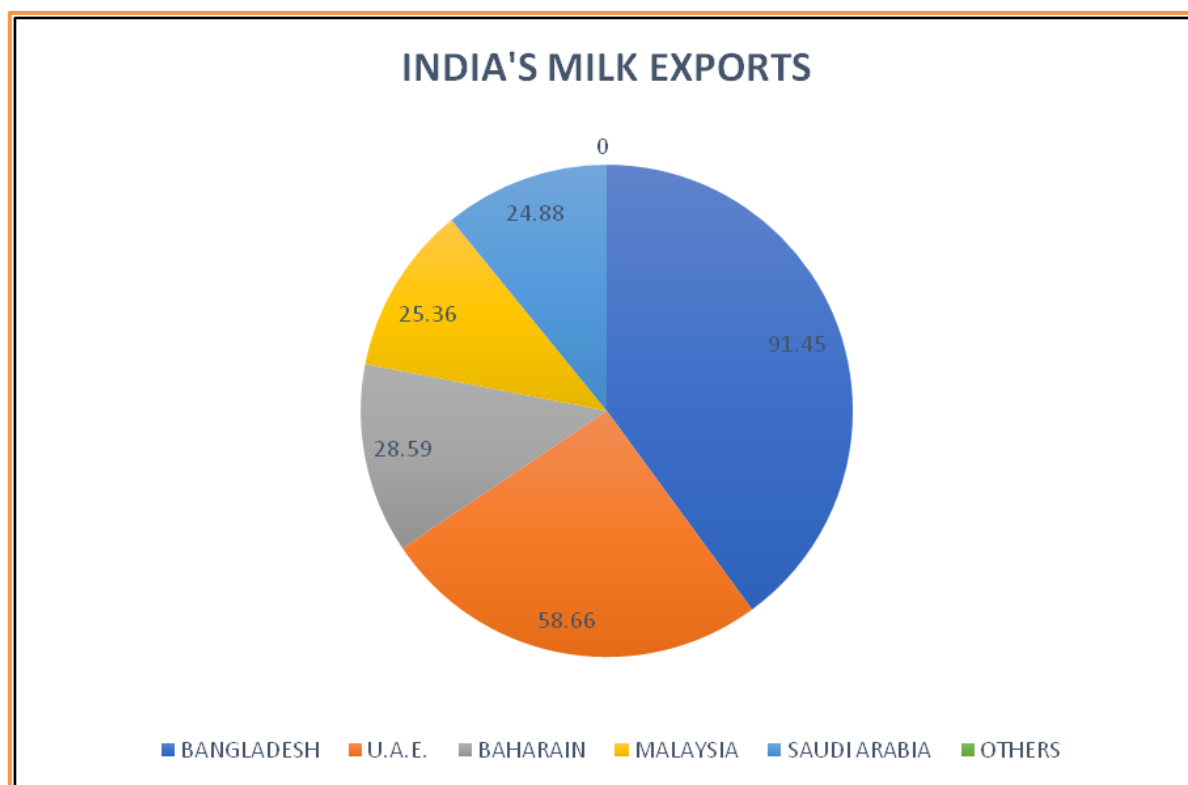


Figure 3. Exports of dairy products (Image source: Author's compilation (2025); Data Source: Apeda)

The major reason for the Paradox

A major reason India lags is its poor cold chain infrastructure, frequent quality and sanitary certification issues, and a domestic focus that leaves little surplus for international markets. By 2013-14 onwards global SMP prices fell sharply due to overproduction in EU and New Zealand, while domestic milk demand in India rose. This made it more profitable to sell milk within the country rather than export. By 2014-15 itself exports of milk powder and other dairy products dropped by over 50% compared to 2013-14. Since then, India's dairy exports have remained a small fraction of production, rarely crossing 0.2-0.2% of total output. Moreover, recently by April 2025, President Trump announced "reciprocal tariffs" ranging from approximately 11% to 49% on imports from around 60 countries, including India. Even before these moves, Indian dairy products like ghee (50% tariff) and shrikhand (75% tariff) were already subjected to high Tariffs in the U.S.

Pathways to Global Competitiveness

India has the potential to become a global competitive force by transforming its export potential. Key measures include investment in infrastructure and quality standards through schemes such as the Dairy Processing and Infrastructure Development Fund (DIDF) and the Animal Husbandry Infrastructure Development Fund (AHIDF). Improvements in feed quality, conservation programs, and veterinary services further support productivity. At the same time, tapping into niche markets for A2 milk, ghee, and traditional products like paneer can create new opportunities. Strong branding through companies like Amul, along with active participation in regional trade agreements and WTO negotiations, will also help open access to international markets under more favorable conditions. Though we consume more than what we actually want (suggested by ICMR), the distribution is not even due to weak infrastructure and cold chains. Expanding cooperatives, improving cold storage and transport, adding milk to nutrition schemes can help. With supportive policies, surplus can reach deficit areas, ensuring balanced and fair access and by utilizing the milk products effectively.

There are many schemes available in India that are implemented by state and central government in order to increase the milk production and distribution like “Milch Animal Loan Scheme (TABCEDCO)”, “Animal Husbandry Infrastructure Development Fund (AHIDF)”, etc.. When it comes to the question “Does this actually work?” then the answer would be “Yes”. But only if these measures are planned and implemented well, it can benefit local communities. The project must involve community members in decision-making, to ensure fair price for farmers, and also to avoid concentrate benefits only with urban centers. There should actually be effective use of milk and their product with wasting it.

Conclusion

India’s journey in dairying has transformed it from a nation once struggling with shortages to the world’s largest producer of milk with production over 230 million tonnes- nearly quarter of the world’s supply. This achievement was made possible by the White Revolution and years of collective effort by farmers, cooperatives, and policymakers. However, the sector still faces hurdles such as unequal distribution, not utilizing effectively, weak export presence, and strict global quality norms. At this stage, the priority is not merely to produce more milk, but to ensure that it reaches all regions fairly, while also adding value through processing and diversification. Stronger cooperatives, modern technology, better infrastructure, and export-friendly policies can bridge the existing gaps. If these steps are taken, India can guarantee nutrition for its people and also emerge as a trusted contributor to the global dairy market. The future of the dairy industry lies in finding the right balance between abundance at home and competitiveness abroad.

References

1. FAO (Food and Agriculture Organization). FAOSTAT – Milk Production and Trade Statistics <http://www.fao.org/faostat>
2. The Times of India. India tops in milk production, but exports remain low due to tariffs and standards. (2024) <https://economictimes.indiatimes.com/opinion/et-commentary/indias-dairy-paradox-what-bharat-the-worlds-top-milk-producer-must-do-as-trump-tariffs-open-a-window/articleshow/121145356.cms?from=mdr>
3. IBEF (2010-2025). Development of India’s Dairy Sector <https://ibef.org/blogs/development-of-india-s-dairy-sector>
4. NDDDB (2023). *Indian Dairy Sector Statistics 2023–24*. National Dairy Development Board, Anand. https://www.nddb.coop/sites/default/files/pdfs/NDDDB_AR_2023_24_Eng.pdf
5. National Dairy Development Board (2017) Milk Production in India <https://www.nddb.coop/information/stats/milkprodindia>
6. USDA Foreign Agricultural Service. Dairy and Products Annual: India, 2023. https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Dairy%20and%20Products%20Annual_New%20Delhi_India_IN2023-0072.pdf
7. Dairy news 7x7 <https://www.drishtias.com/daily-updates/daily-news-analysis/white-revolution-2-0>
8. TNAU (2015) Govt. Schemes & Services :: NADP in Tamil Nadu https://agritech.tnau.ac.in/govt_schemes_services/govt_serv_schems_nadp_tn_13.html
9. Department of Animal Husbandry & Dairying (2025) <https://dahd.gov.in/schemes-programmes>
10. Amul (2025) <https://amul.com/m/about-us>