



A Brief Introduction to the Dairy Sector

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Abstract

Dairy is a diverse field as it is not only limited to just the milking of animals but far more to processing and introducing new products into the market. As we all know, India is one of the largest consumers and producers of dairy products. This demand in the market has led to the development of the huge dairy industry, which is not only limited to milk but simultaneously focuses on its other allied products, which shows that Indian dairy products have an enormous potential for value addition. This sector is not just contributing to generating employment and raising income and contributing to the country's economy simultaneously contributing to women's empowerment, rural development, promotion of small-scale industry, and sustainability in rural and urban areas.

Introduction

Indian dairy industries have significantly developed from traditional methods of processing to adopt this new modern technique, which continuously helps to fulfill the demand of the people. This makes India a larger milk producer, contributing 23% of the total milk production globally. This shows the significant development of this sector from a milk-deficit country to a self-sufficient nation. It was possible only because of the successful completion of the White Revolution, also known as Operation Flood in 1970, led by Dr. Verghese Kurien. It was the world's biggest dairy development program, making India a global leader in milk production. And this shows the remarkable journey of self-reliance of this sector to mark this development, India celebrates 26 November as National Milk Day on the birthday of Dr. Kurien, and on June 1 we observe it as World Milk Day through the Food and Agriculture Organization.

There is the production of 221.06 million tonnes of milk in the year 2021-2022 with a growth rate of 5.29% according to PIB, therefore processing industry plays an important role in the preservation and processing of milk to produce various dairy products such as curd, yogurt, ghee, buttermilk, cheese, butter, ice cream, dried milk, condensed milk, toned milk, kefir, and many other things providing a diverse variant of products according to customer demand.

Such a vast range of products requires huge processing industries where various players and cooperatives play a significant role at the individual level.

Dairy is an important component of Indian Culture and has its own aesthetics and religious value. It also covers a large segment of Indian cuisine. Buffalo milk accounts for 49%, crossbred and exotic cow milk accounts for 27% and indigenous cow milk accounts for 21% of the total milk production in our country.

The Indian dairy sector has experienced remarkable growth and transformation over the years. It plays a pivotal role in the country's agricultural landscape and has become significant contributor to the Indian economy. This article delves into the dynamics, challenges, and future prospects of the Indian dairy industry.

A Growing Powerhouse

India is the world's largest milk producer, accounting for over 23% of global milk production. This achievement is primarily attributed to the country's immense bovine population, which includes a mix of indigenous and crossbred cattle, buffaloes, and goats. The dairy sector is not only a source of livelihood for millions of rural households but also a vital source of nutrition for the population.

Source of Nutrition

Dairy products are highly nutritious, providing high energy to the body. It is protein and calcium-rich food supplying various micronutrients which are most critical for the growth and development of the body. Calcium intake helps in skeleton calcium retention, bone development, and providing bone strength and density. It also helps reduce cholesterol absorption, control blood pressure, and maintain body weight.

Ayurveda and modern-day research have both confirmed the special ability of milk and its products to cure disease, which was already known to ancient peoples.

The nutrient content in the milk is water (86-87%), fat (3-5%), protein(3-5%), lactose (4.5-5%), minerals (0.7%) and it also contains some other micronutrients like enzymes, phospholipid, pigments, vitamins, sterols, etc.

Proteins help in muscle development and repair., calcium is good for maintaining healthy teeth and bones, riboflavin a type of vitamin B, develops stronger immunity and increases red blood cell production, and improves metabolism, vitamin A develops good eyesight and skin, vitamin D increases calcium absorption, vitamin B3 or niacin boost body circulation and brain functioning, potassium is maintaining good blood pressure and body fluid pressures and it also provides pantothenic acids which help to transform food into energy. So dairy products play a crucial and critical part in one's diet and should maintain consumption appropriately.

Key Factor Driving Growth

Diverse Livestock: India's dairy sector benefits from a diverse range of dairy animals, with buffalo milk being highly prized for its high-fat content. The crossbreeding of indigenous cattle with exotic breeds has led to increased milk yields.

Cooperative Movement: The Amul model, with the Anand Milk Union Limited (AMUL) at its forefront, has played a crucial role in organizing farmers into cooperatives. These cooperatives have ensured fair prices for milk and have given farmers access to modern technology.

Technological Advancements: The adoption of modern dairy farming practices, including improved cattle management, feed, and healthcare, has enhanced milk production efficiency.

Increasing Dairy Processing: The dairy processing industry has witnessed substantial growth, with a wide range of products such as milk, yogurt, cheese, and ice cream. India has also ventured into exports of dairy products, expanding its global presence.

Role in Indian Economy

According to the annual report of 2023, dairying has become a secondary source of income in rural areas of our country. India exports dairy products for the worth of Rs. 2928.79 crores or 391.59 USD dollars, which is equal to 108711.27 MT to the world in the year 2021-22, according to APEDA.

The dairy industry processes milk into various products, whose demand is increasing day by day. Another important thing is the dairy cooperative. In our country, there are approx. 73000 dairy cooperatives play a crucial role in shaping the country's economy. Amul, one of the largest dairy cooperatives, contributes significantly to the economy through various sectors. They have helped to boost the production of processed products and fulfilling the demands not only in our country but also by exporting them.

The dairy industry contributes 5% to the national economy and directly provides employment to 80 million dairy farmers in our country, directly or indirectly boosting the local workforce resources. It also provides a linkage or connection between forward and backward references.

Rajasthan is the leading state in milk production with 15.05% of total milk production followed by Uttar Pradesh at 14.93%, Madhya Pradesh at 8.60%, Gujarat at 7.56%, and Andhra Pradesh at 6.97% in the year 2021-22.

It has helped in the overall development of the socio-economic conditions of the rural areas while providing a livelihood for the sustaining of small and marginal farmers.

India exported 61223 MT of dairy products in the year 2022-23, showing our reduced dependency on the other country for dairy products and significantly increasing our forex reserves, helping to strengthen our currencies.

Dairy has become one of the leading startup businesses in our county supplying high-quality milk and pumping our economy.

Future Prospect

The Indian dairy sector's future looks promising but comes with its set of challenges:

Value Addition: Increasing the value-added dairy product portfolio, such as specialized cheeses and functional foods, can enhance profitability.

Export Potential: With the right quality standards and certifications, India has the potential to become a significant exporter of dairy products.

Sustainability: Promoting sustainable dairy practices, including eco-friendly cattle rearing and waste management, is essential for long-term growth.

Technology Adoption: Continued adoption of technology, including artificial intelligence in cattle management and automated processing, can further boost productivity.

Government Schemes and Programmes

- National Programme for Dairy Development
- Supporting Dairy Cooperatives and Farmer Producers Organizations engaged in dairy activities.
- Dairy Processing and Infrastructure Development Fund
- National Dairy Plan II Scheme
- Quality Milk Programme
- Delhi Milk Scheme
- Mega Food Park Scheme
- State Specific Incentives offered by different states for dairy development.
- Dairy Entrepreneurship Development Schemes
- Animal Husbandry Infrastructural Development Fund

Challenges

- Shortage of Feed and Fodder
- Inadequate quality of water availability
- Sanitation and Hygiene and Immunization
- Animal Health and Disease
- Climatic Conditions and Changes in Weather Patterns

- Lack of data on the availability and production of green fodder
- A large population of unproductive cattle
- Absence of an effective extension system
- Lack of cold chain logistics
- Unorganized marketing structure
- Productivity gap
- Supply Chain and Infrastructure
- Quality and Safety Standard

Conclusion

The Indian dairy sector has come a long way, evolving from traditional practices to a modern, dynamic industry. While challenges exist, the sector's enormous potential for growth, economic contribution, and nutritional impact on the population make it a vital part of India's agricultural landscape. With strategic investments and a focus on sustainability, the Indian dairy industry is poised for a bright future.

The demand for milk and its products is increasing consecutively day by day. Providing opportunities for individuals to opt for dairy farming. India has huge potential and favourable conditions for dairy farming and which India is using more effectively. Same this has been promoted by the government through various schemes, and national and state programs helping our country to bring out the best and one of the largest dairy industries.

Estimation has shown that our dairy production has increased at the rate of four percent per year. India has prepared the roadmap for 2025 to double the milk processing capacities from 53.5 million tonnes to 108 million tonnes and aims to increase India's share in world export from 0.36% to 10%. This sector is all set to take another step in its growth by improving the quality of milk, upbrining home brands, introducing new technology and product innovations, and through regulated government policies and segmented market structure.

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