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## A STUDY ON VARIOUS PROSPECTS OF INDIA'S DAIRY SECTOR

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### ABSTRACT

*India is the biggest producer of milk on the planet; its dairy subsector is a fundamental aspect of its agricultural economy. Milk creation has developed so remarkably that it presently offers more than some other homestead product to the national economy. Little and minor farmers, and landless workers, generously rely upon dairying for their occupations; they make up over 80% of the nation's milk producers and produce about 70% of the milk. The dairy segment assumes a conspicuous function in agricultural and food policy since it represents about a fifth of the estimation of India's ranch yield, and dairy items are a conventional and healthfully significant segment of normal eating regimens. India with the all out milk production of 146 million tones is the world's most elevated milk-creating nation for as far back as multi decade now and represented about 18.5 percent of the world milk production in 2015-16. Different investigations have outlined that consumers are eager to pay a premium for food products that are properly named by credible organizations. From chronic deficiencies of milk, India has developed as the biggest milk producer on the planet crossing 132.4 million tons in 2012-13 and per capita accessibility of milk increasing from around 110 grams for each day in mid 1970s to 299 grams in 2012-13*

**Keywords:** milk, dairy, food, consumer, policy.

### I. INTRODUCTION

India is the biggest producer of milk on the planet; its dairy subsector is a fundamental aspect of its agricultural economy. Milk creation has developed so remarkably that it presently offers more than some other homestead product to the national economy. Little and minor farmers, and landless workers, generously rely upon dairying for their occupations; they make up over 80% of the nation's milk producers and produce about 70% of the milk. In the territory of Bihar, as well, milk creation is a noteworthy wellspring of salary among little and minor farmers. Smallholder dairy farmers produce around 80% of the complete milk. The development of India as a chief dairy country of the world could be credited primarily to the serious crossbreeding programs actualized all through the nation throughout the most recent couple of decades. The populace pressure and developing worldwide open doors further require that the endeavors for improving creature efficiency are quickened. This calls for duration of very much demonstrated advancements, for example, crossbreeding with predominant germplasm combined with progress in the profitability of huge populace of by and large low delivering steers and bison at



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quicker rate utilizing developing regenerative and sub-atomic advances. In this setting National Dairy Research Institute (NDRI) Karnal has additionally set the objective of improving its semen creation from the current degree of about 0.1 million dosages yearly to about 2.5 million portions for every year by 2020 A.D. In all intelligent projects including field recording, offspring testing and information bank ought to be taken to flexibly data on accessibility of semen, bulls, and females and so on for reliable hereditary improvement of animals. To successfully screen these projects, there is a pressing requirement for connecting them with bio-informatics focuses at state, national and international levels. There is additionally a pressing need to create national creature creation and wellbeing data framework and ailment free zones in the nation.

A lot of the all out milk in India rose from 3.2% in 2001–02 to 5.2% in 2018–19. Milk creation expanded reliably in the previous twenty years because of the favorable policy condition (breed improvement and the advancement of milk advertising channels). The indigenous cow populace has been declining in the state while the crossbred populace has been expanding quickly, and the bison populace has been developing barely, and the profitability of a wide range of creatures has possibly expanded. Be that as it may, milk efficiency in the state is just 4.5 liters, significantly less than the national normal of 5.1 liters and it changes by the wellspring of milk. The yield from crossbred bovines is 17% not exactly the national normal and from bison 22% less, yet the yield from dull dairy animals is 11% more than the national normal. Across regions, the spatial dispersion of milk creation is inconsistent. It could be because of the inconsistent increment or lessening in the number of inhabitants in crossbred cows, dull cows, and wild oxen in the locale. The specialized effectiveness of dairy farmers has been estimated, however not by the kind of dairy rancher or market access.

## **II. INDIA'S DAIRY SECTOR: STRUCTURE, PERFORMANCE, AND PROSPECTS**

India is the world's biggest producer and buyer of milk and has, by a long shot, the world's biggest milking crowd. Accessible information demonstrate that milk creation has been expanding at about 4.2 percent yearly since 2000, coordinating growth in demand as higher wages spike more utilization of liquid milk and dairy items. The dairy segment assumes a conspicuous function in agricultural and food policy since it represents about a fifth of the estimation of India's ranch yield, and dairy items are a conventional and healthfully significant segment of normal eating regimens. Up until this point, exchange dairy items has been little comparative with creation and utilization, with India changing from a net shipper of milk powder and butter oil up until the mid 1990s to a net exporter, fundamentally of milk powder and casein items, since the mid 2000s. With a huge however low-yielding milking crowd and a huge and expanding homegrown market, India's dairy segment has the potential for a more critical part as a dairy item exporter and shipper. Future prospects for India's function in world dairy advertises likely rely on its capacity to improve the low efficiency of its milking crowd, and on the growth and intensity of its developing dairy item sectors. Key to efficiency increases will be the proceeded with development of India's moderately high-yielding crossbred dairy group, alongside proceeded with growth in wild ox milk creation—presently the biggest portion of milk yield. In the two cases, yield gains are probably going to



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be progressively reliant on improving now-inadequate supplies of feeds and upgrading hereditary qualities, the two of which may give chances to exchange. India's agreeable and private-segment dairy processors have, up until now, been effective in satisfying developing homegrown need for dairy items.

***(a) Operation Flood and the “Anand Model” of Cooperative Dairy Development***

The Anand model of cooperative dairy development through the Operation Flood program has been the key element of India's dairy development endeavors. The main cooperative was set up in Anand, Gujarat, in 1946 in response to the low costs farmers got from a private dairy for their milk. Producers framed a cooperative so as to sell legitimately to buyers, getting greater costs for their milk. The town level social orders gather milk day by day from individuals, with the milk chilled, totaled, and shipped to a cooperative plant claimed by a DCMPU. Individuals get a quick installment dependent on the fat substance of their milk, and a later installment dependent on the general income of the district and State unions.

***(b) Dairy Policy***

Homegrown dairy policy has progressed from the "Operation Flood" period covering 1970-96, to a "Point of view Plan" period somewhere in the range of 1996 and 2010, to the current National Dairy Plan (NDP) period covering India financial years 2011/12-2018/19 (April/March). Under Operation Flood (I, II, and III), the National Dairy Development Board (NDDB)— which is basically answerable for actualizing national dairy policy—improved milk acquisition, handling, and marketing, principally by building up dairy cooperatives to connect little provincial producers and metropolitan shoppers. During the Perspective Plan time frame, NDDB further reinforced dairy cooperatives with an emphasis on cooperative organizations, dairy creation, quality control, workforce development and preparing, and making a national data organization. Right now, under the NDP, the need has moved to improving creature profitability..

***(C) Improving Animal Breeding***

The National Project on Cattle and Buffalo Breeding (NPCBB), a component of the NDP with a 10-year financial plan of \$255 million, started in 2000 with the goal of further building up the infrastructure expected to improve cattle and buffalo breeding through artificial insemination (AI). Another program covering 2012/13-2017/18, the National Program for Bovine Breeding and Dairy Development (NPBBDD), centers on offering breeding types of assistance, infrastructure to improve milk quality, obtainment, handling, and marketing, and giving sources of info and preparing to farmers. The RashtriyaGokul Mission, part of the NPBBDD, targets improving the hereditary capability of indigenous cattle. The project visualizes hereditary upgrades of indigenous cattle and buffalo, development and conservation of significant indigenous breeds, and foundation of an economical breeding policy, with an attention on expanding milk production. Another national-level program is the RashtriyaKrishiVikasYojana, which gives budgetary help to State Governments to improve fodder



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development, cattle and water buffalo hereditary qualities, milk production, domesticated animals health, and infrastructure.

***(d) Food quality and safety***

Food quality and safety issues are controlled by various acts and offices. The Ministry of Food and Consumer Affairs is the fundamental organization managing issues of food safety. There are different services/divisions, which are engaged with food regulations. The Prevention of Food Adulteration Act is the principle food safety act enforced by the Ministry of Health and Family Welfare, Government of India. It centers on the foundation of administrative standards for food safety and applies similarly to homegrown and imported foods including domesticated animals products. It covers different parts of preparing and distribution, for example, shading, additives, and pesticide deposits, bundling, marking and deals regulations. The Bureau of Indian Standards makes standards for food products. The Standards of Weights and Measures Act builds up reasonable exchange practices concerning bundled items, and makes it fundamental for the manufacturers to show information about the idea of the product, date of manufacture and retail cost on the name.

**III. THE GROWTH AND DEVELOPMENT OF DAIRY INDUSTRY IN INDIA**

India with the all out milk production of 146 million tones is the world's most elevated milk-creating nation for as far back as multi decade now and represented about 18.5 percent of the world milk production in 2015-16. The significance of dairy undertaking in the national economy can be checked from the fact that the estimation of yield from milk bunch is most elevated among all the agricultural items, representing almost one fourth of the estimation of yield from agricultural segment. Dairying is one of the most significant methods for giving employment and nutritional security to the rural masses.

***(a) Future Challenges of Dairy Industry***

Lodging management part of the new breeds/strains of high yielding dairy animals created in the nation likewise should be tended to sufficiently as it is basic to understand the high milk production potential. Animal's asylum necessity differs as per the agro-climatic conditions of the region and the financial condition of its farmers. The example of traditional animal, protects likewise differs from region to region. So as to make explicit recommendations it is basic to mull over the physiological, conduct and other related parts of the animal comfort. It is, therefore, fundamental to complete the definite investigation on type and arrangement of lodging required for various agro-climatic regions and recommends ideal asylum frameworks dependent on these goal models. The Indian dairy industry is ready for emotional growth in the coming decades. The population growth, urbanization, pay growth, high salary versatility of demand, and changes in food propensities that powered the expansion in milk consumption are relied upon to continue well into the new thousand years, making a genuine Livestock Revolution.



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***(b) Amul and the evolution of the Anand model***

Milk obtainment from the rural areas and its marketing in the urban areas was the serious issue in Indian dairying at the time India picked up autonomy. In one of the soonest urban milk flexible plots, Polsons - a private dairy at Anand - procured milk from milk producers through agents, handled it and then sent the milk to Bombay, about 425 km away. Bombay was a decent market for milk and Polsons profited colossally. During the 1940s, when the milk producers in Kaira requested a proportionate portion of the exchange edges, they were denied even an unassuming increment. The milk producers picketed, declining to gracefully milk to Polsons. On the exhortation of Sardar Vallabhbhai Patel, an innovator in India's freedom development, the milk producers registered the Kaira District Cooperative Milk Producers' Union, presently famously known as AMUL, in 1946.

Bihar, with a population of around 104 million, is the third-most populated state in India, after Uttar Pradesh (200 million) and Maharashtra (114 million) it has one of the least for each capita livelihoods and one of the most elevated rates of neediness. Dairy is a significant pay creating activity for the rural poor in Bihar, involving around 31 percent of the state's agricultural gross domestic product (AGDP) and contributing around three-fourths of domesticated animals GDP.

Rural India faces a lot of difficulty to possess a day's supper. A bigger level of rural individuals in India associated with farming, animal husbandry, and distinctive appurtenant activities. Today, agricultural pay has been decreased. The minimal and little farmers were not equipped for accomplishing profits from crop cultivation.

**IV. COMPLIANCE WITH FOOD SAFETY PRACTICES AMONG SMALLHOLDER DAIRY FARMERS IN BIHAR, INDIA**

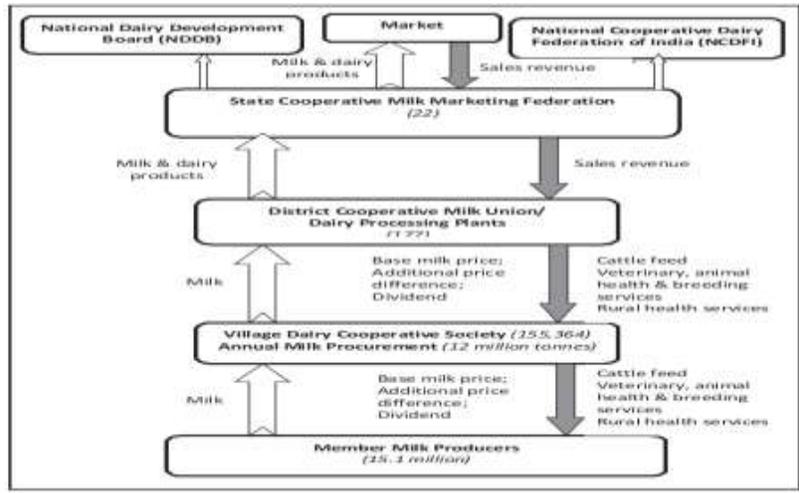
The demand for food safety, a vital component of food security, is expanding. The developing demand for food safety can be incompletely ascribed to changing consumer inclinations instigated by rising expectations for everyday comforts and developing concerns about food safety. Different investigations have outlined that consumers are eager to pay a premium for food products that are properly named by credible organizations. Most nations, particularly created ones, force nontariff obstructions, particularly in the event that they figure the imported products don't follow suitable horticulture and manufacturing practices and are not all around tried, guaranteed, and marked. Expanding public mindfulness and developing recognition of a coordinated "ranch to-fork" way to deal with food safety are putting a more noteworthy accentuation on consistence with food safety measures (FSM) at the homestead level—the primary phase of the worth chain. Food is a productive conduit for microorganism transmission, and milk is one of the most hazardous food products. The production of sterile and quality milk is one of the greatest difficulties looked by creating nations.

**V. DETERMINANTS OF SMALL MILK PRODUCERS'**

From chronic deficiencies of milk, India has developed as the biggest milk producer on the planet crossing 132.4 million tons in 2012-13 and per capita accessibility of milk increasing from around 110 grams for each day in mid 1970s to 299 grams in 2012-13. This example of overcoming adversity of milk production has been composed fundamentally by the millions of smallholder producers, who spot the landscape of milk production in the nation. Despite the fact that the yields have remained very low compared to the world normal, the dairy sector has made due as well as prospered. A few factors seem to have helped it thrive. The "Operation Flood", one of the world's biggest dairy development programs, which assisted with making strong organization and linkages among millions of smallholder milk producers, processors and urban consumers,

**(a) Changing Structure of Indian Dairy Sector**

Milk production is a significant rural activity in India giving supplementary pay, work and nutrition to millions of rural family units. With an estimation of yield of about ' 167,720 crore (US\$ 28 billion) during triennium finishing (TE) 2012-13, it positioned first, surpassing rice and wheat joined, in India's agricultural sector. The yield of milk and milk products has increased faster than of the harvests during the past forty years. The higher salary elasticity of demand for milk and milk products coupled with developing urban population prompted a fast growth in demand, which has been met by higher pace of growth in milk production. Milk production was pretty much stale during the 1950s and 1960s and yearly production growth was negative in numerous years. The per capita accessibility of milk declined which concerned the policy creators



**Figure 1: Three-tier “Anand Pattern” of dairy development in India**



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***(b) Effects of key factors and policies on dairy development trends***

Multiplier effects of the Green Revolution - when all is said in done, development of the yield sector and the infrastructure related with this development during the time of the Green Revolution have assumed a key role in dairy development. The regional examination shows plainly that the role of irrigation and fertilizer through increasing year around accessibility of fodder, and through more extensive innovation cycles of rancher technology uptake, have been a portion of the primary main thrusts to dairy development in India.

***(c) Effects of trends, key factors and policies on the poor***

Business The dairy industry has been appeared to give a staggering degree of work to rural and urban poor between 1.3 to 1.8 million individuals nationally are assessed to be utilized in the raw milk and traditional product market that rules the sector. In markets, little scope business people have effectively entered into an assorted variety of products, including frozen yogurt, expanding openings by taking advantage of moving tastes and salary trends. At the production level, somewhere in the range of 18 million individuals nationally might be directly utilized in dairy production, either are farmers or as hired workers on dairy ranches. There is no question that growth in the dairy subsector, and consequent growth in smallholder production and marketing, has assumed a significant role in neediness alleviation, and in salary for ladies. A large number of those hired on dairy ranches are probably going to be among the poorest. Likewise, considering that a noteworthy proportion of milk production originates from landless and socially minimized producers, dairy gives huge chances to those groups as well, for who options might be not many..

**VI. RETAILERS' ROLE IN THE MARKETING OF FRESH MILK AND DAIRY PRODUCTS**

In the present modernized market, retailers assume the role of a "gatekeeper" within numerous product chains connecting suppliers with consumers and the other way around and being in direct contact with consumers they apply huge influence on what products consumers need to purchase, and how they utilize and arrange them. On the other hand, they contact suppliers overall bearing the chance to energize profitable production practices. Retailers can directly influence consumer decision at the business point. The rising significance of the dairy sector in the agricultural economy has been one of the most significant highlights of India's agricultural transformation. Somewhere in the range of 1970 and 2016–2017, the dairy sector's offer in the value of agricultural yield increased from 11 percent to 19 percent. India, with 165 million metric tons, is the biggest milk producer on the planet and milk production continues to develop at a vigorous rate. Be that as it may, dissimilar to most business endeavors found in many created nations, milk production in India is dominated by smallholder dairy farms.

**VII. DAIRY ECONOMY OF INDIA STRUCTURAL CHANGES IN CONSUMPTION AND PRODUCTION**



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The dairy sector is without a doubt a significant component of India's rural economy regarding income, work, value, socio-economic development, nutritional food security, ladies' strengthening and likewise foreign exchange earnings. The sector has opened new income opportunities for rural households and is a significant instrument to battle destitution and improve the nutritional intake of rural families. Dairy products contributed about 6.4 per penny of calorie intake in rural and 8 per penny in urban India in 2009–10, while their contribution in protein intake was 9 per penny in rural and 13 per penny in urban areas for a similar period. Milk and dairy products are a significant wellspring of modest and nutritious food to millions of Indians. The dairy sector in India has seen striking growth, which is demand-driven, inclusive and favorable to poor. India is the world's biggest producer and consumer of milk. With a production of 121.8 million tons in 2011, it represented 16 per penny of the world's absolute milk production. In 2010–11, 29.64 per penny of India's agricultural gross domestic product (GDP) originated in the livestock sector, with the dairy subsector accounting for roughly 70 per penny of livestock yield.

### **VIII. CONCLUSION**

India is the biggest producer of milk on the planet; its dairy subsector is a fundamental aspect of its agricultural economy. Milk creation has developed so remarkably that it presently offers more than some other homestead product to the national economy. Little and minor farmers, and landless workers, generously rely upon dairying for their occupations; they make up over 80% of the nation's milk producers and produce about 70% of the milk. In the territory of Bihar, as well, milk creation is a noteworthy wellspring of salary among little and minor farmers. Smallholder dairy farmers produce around 80% of the complete milk. Milk and dairy products are a significant wellspring of modest and nutritious food to millions of Indians. The dairy sector in India has seen striking growth, which is demand-driven, inclusive and favorable to poor. India is the world's biggest producer and consumer of milk. With a production of 121.8 million tons in 2011, it represented 16 per penny of the world's absolute milk production. In 2010–11, 29.64 per penny of India's agricultural gross domestic product (GDP) originated in the livestock sector, with the dairy subsector accounting for roughly 70 per penny of livestock yield. India's vast asset of livestock assumes a crucial role in improving the socio-economic conditions of the rural masses.

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