

# Dairy Entrepreneurship for Employment and Rural Livelihoods Security

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## Abstract:

The growth of dairy sector since independence is continue except the period from independence to existence of NDDB in the country. The present annual growth rate of 5.7% in dairy farm sector and 10% in milk processing sector shows that dairy sector will prove beneficial for livelihoods security under rural area and it will open, new avenues of entrepreneurs under rural, peri-urban and urban areas. During recent past annual milk production of 198.4 MT shows that in the beginning of next decade, we definitely achieve the target of 330.00 MT annual production of milk (Madhvi, 2021). This could be possible to achieve the target by establishing new entrepreneurs under rural area, which will open the door for new job opportunities as well as better quality of milk and milk products. At present about 16.90 million farmers are associated with 1,90,500 village cooperative societies affiliated to 245 milk unions and 22 federations and 6.37 lakh dairy personals are engaged in milk processing (Table-1), when we are able to handle only 40% of marketable surplus milk by organized sector in the country (Anonymous, 2020). In future, we are hopeful that present requirement of dairy personal will be almost one and half times more in 2032-33 than the present position. At that time, our milk production is expected to be 330.00MT annually. This shows that dairy sector is hope of millions of rural poor and creation of new job avenues under rural area by establishing the new dairy enterprises in the country.

**Key words:** Dairy sector, entrepreneurs, employment, livelihood security

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## I. INTRODUCTION :

The present scenario of the country shows that agricultural sector is providing employment to the 45.1 % population of the rural area and 51 % of total work force of India, whereas its present contribution to the GDP is only 17.6% (2018-19) , which was 59.0% during (1951-52). This shows that agriculture sector is not preferred by people. Simultaneously, looking towards dairy sector total milk production in India during 1951 was 17.00 MT and it became about 198.4 MT in 2019 (Madhvi, 2021). Dairy sector is the lifeline of 75 million farmers, providing employment to the 8.47 million people on yearly basis, of which 71% are women and on an average these farmers are drawing about 33.01% income from dairy farming (Jaiswal, et al,2018), while country is leading in dairy sector since over a decade.

The growth of dairy sector is visualized that cooperative dairy was born in 1946 at Anand, Gujarat, which is popularly known as "Amul", with its milk collection of 250 lit per day, have grown to the height that, this sector have 16.90 million farmers associated with 1,90,500 village cooperative societies, which are affiliated to 245 milk unions and 22 federations, which are responsible for procurement of 508 lakh kg milk per day (Anonymous, 2020). According to the working group report-2018 of NITI Aayog, milk production in India will increased around 330 MT in 2032-33, where we must increased milk handling capacity of organized sector. It shows that we have opportunities of entrepreneurship in dairy sector, where government is also supporting this sector through different ways, where farmers can avail the benefits of government policies.

## II. MATERIALS AND METHODS :

The information presented in this article is collected from the different sources including reports, journals, books and web-sites. The information in the form of data / figures were included in this article with the objectives, to know the actual status of dairy sector at farmers level as well as processors level. The growth of dairy sector and employment opportunities in this sector were also reviewed here under this publication.

### Bird eye view of dairy sector in India:

Year / Period	Progress of dairy sector
Vedic period	Evidence of milk consumption is available in the literature
8000 years ago	Zebu cattle were domesticated in Indian subcontinent
c. 3300 - c. 13000 BCE	Zebu cattle were domesticated and used for milk production
c. 800 - c. 300 BCE	Boiled rice with milk a common food item
1630	Bengal was famous for milk based desserts
1875	Cross breeding of cattle started in India
1919	First dairy animal census was conducted
1937	Milk consumption in India was 200 gm per head per day
1920	Modern milk processing and marketing technologies were introduced in India
1946	Three tier cooperative system was evolved at Anand, Gujarat
1955	Dairy and milk power plant was established with the support of UNICEF at Anand
1960	AMUL start production of milk power and baby food from buffalo milk first time in India
1965	NDDB was founded
1969-70	Operation Flood Programme-I was launched
2020-21	Total milk production in India 198.4 MT

The development of dairy sector is taken place since Vedic period, realized from the domestication of Zebu cattle in Indian subcontinent before 8000 years ago. The use of milk for preparation of "kheer" during c.800 to c.300 BCE and for preparation of famous Bengal desserts during 1630 is well documented.

The initiation of crossbreeding in cattle during 1875 and introduction of modern milk processing technologies during 1920, followed by three tier dairy development programme in 1946, establishment of dairy and milk power plant with the support of UNICEF in 1955 and launching of world's largest dairy development programme i.e. Operation Flood Programme-I are some of the events, which make India world leader in milk production since over a decade.

Presently, we are producing 198.4 MT of milk annually, which is about 24% of world's milk production (Madhvi, 2021). The main reasons in increasing the milk production in India are : (i) better management, (ii) more emphasis on feed quality and planned breeding programme; and emphasis on utilization of our naturally available resources for regular income.

Source : Anonymous (2021)

### Employment opportunities in dairy sector :

Dairy sector is the source of livelihoods of 75-80 million rural households in India, where majority of them are landless, marginal and small farmers. From the total milk production in India, 48% milk is consumed at producer level or sold to the non producers in the rural area and remaining 52% of the milk is marketable surplus and

**Table-1: Requirement of dairy personnel for milk procurement**

Year	No of milk plants	No of persons required for milk plants	No of bulk chilling plants and testing equipment	No of diploma / certificate holders required for plants / testing equipment	No of quality testing lab	Personnel required in labs	Overall personnel requirement
2010-11	----	24,881	10,000	20,000	10	60	44,941
2019-20	1205*	37,041	3,00,000	6,00,000	100	6000	6,36,764

Source : \* Projected figures based on the assumption that 25 dairy personnel require to handle 1.00 lakh lit of milk.

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available for sale to consumers in urban area from this Anonymous (2012) LMIS Report on Dairy Sector : Agriculture Skill Council of India, as per projections of 12<sup>th</sup> FYP about 40% of milk is handled by organized sector and remaining 60% by the unorganized sector (Anonymous, 2019). The use of manpower for transportation, processing, handling and marketing of milk further open the opportunities of employment in this sector. It shows that about 6.37 lakh personnel require to handle the milk in the plants, chilling center and quality control labs (Table-1), which is require after dairy farm activities. In addition to this there are ample opportunities of employment under marketing division of dairy sector for selling the milk and milk products in the rural and urban areas, which is also a source of employment.

Further, it is visualized that milk production in India was 17.00 MT in 1951 and reached to the 187.7 MT during 2019, which is increased to 198.4 MT in 2020 and it will be 208 MT in 2021, which is targeted to be 300 MT in 2024 (Anonymous, 2021,a). It shows that there is scope of

**Table -2: Total population, cultivators and agricultural workers (in million) in India**

Year	Total population	Average annual exponential growth rate (%)	Rural population	Agricultural workers		
				Cultivators	Agricultural laborers	Total
1951	361.1	1.25	298.6 (82.7)	69.9 (71.9)	27.3 (28.1)	97.2 (69.7%)
1971	548.2	2.20	439.0 (80.1)	78.2 (62.2)	47.5 (37.8)	125.7 (69.7%)
1991	846.4	2.16	630.6 (74.5)	110.7 (59.7)	74.6 (40.3)	185.3 (59.0%)
2011	1210.6	1.50	833.5 (68.8)	118.7 (45.1)	144.3 (54.9)	263.1 (54.6%)
2019	1366.4	2.90	895.39(65.5)	111.8 (42.6)	155.01(58.1)*	266.81(58.92)*

Source : Anonymous (2014); Pandey (2020) \* Estimated

employment in dairy sector, which is growing at the rate of 5.7% per annum and processing sector is growing at the rate of 10% per annum. Reverse to this, farmers' proportion in the country is declining; which was 71.9 % in 1951 and remains 42.6% in 2019 (Table-2), realized that dairy farming is preferred over agriculture by the farmers. The policy planners shall consider this situation for future planning of the country, where dairy sector shall be given priority over agriculture, as it is advantageous due to better return and regular income throughout year.

#### **Growth of dairy sector :**

The growth of dairy sector is visualized from the performance of dairy animals and increasing the total milk production in the country. As, it was 17.00 MT in 1951 and became 198.4 MT in 2020-21 (Anonymous 2021,a). However, total milk production in India during 2001 was 84.00 MT and became highest milk producer in the world, where contribution of buffalo was more than 50% in the total milk production, but presently contribution of buffalo is 49% (indigenous buffaloes is 35%, non-descript buffaloes is 14%), share of cattle is 47% (Indigenous cow is 10%, non-descript cow is 10%, cross-bred cow is 26%, exotic cow is 1%) and share of goat is 4% in total milk production (2017-18) in the country ([https://en.wikipedia.org/wiki/Dairy\\_in\\_India](https://en.wikipedia.org/wiki/Dairy_in_India)). The average daily milk yield (2019-20) of indigenous buffalo, non-descript buffalo, indigenous cow, non-descript cow, cross-bred cow, exotic cow and goat is 6.34, 4.35, 3.85, 2.50, 7.85, 11.67 and 0.45 kg per animal, respectively (Anonymous, 2021,b). If these figures compare with earlier productivity of these animals, then we will find a significant improvement in milk yield of individual animals, but still productivity of our dairy animals is very low as compare to advanced countries.

The provision of dairy entrepreneurship development scheme, providing 25 to 33% subsidy to encourage the dairy farms and cold chain infrastructure, where 1,41,043 dairy entrepreneurs have been supported by the GoI under this scheme during the period from 2015 to 2019 (Patel and Mothkooor, 2021).

The increasing in large number of dairy farms in the country having more than 50 dairy animals also realized that this sector is hope of farmers for better livelihoods security under rural area. This situation will be helpful for doubling the farmers' income as well as for better job opportunity under rural area, which will prove beneficial for the stakeholders in the country.

#### **Schemes for dairy entrepreneurs :**

There are different schemes for dairy farmers as well as for entrepreneurs sponsored by the government of India as well as by respective state governments in the country to increase the milk production. The brief of some selected schemes is given here as below to bring awareness among the stakeholders as well as extension personal of the concerned department, which will support the government policy for its implementation.

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Sr No	Name of Scheme	Implementing Agency	Major supporting area	Beneficiary
1	National Livestock Mission (NLM)	NABARD	Improve the availability of feed and fodder, conservation and improvement of indigenous breeds	Farmers
2	National Programme for Dairy Development (NPDD)	State Cooperative Dairy Federations	For bulk milk cooler, dairy plant, milk powder plant	District Cooperative Milk Producers' Union
3	Dairy processing and infrastructure development fund (DIDF)	NDDB	For milk procurement by setting up of processing and chilling infrastructure and installation of electronic milk adulteration testing equipment at village level	Village Cooperative Society / Milk Producers' Companies
4	National Programme for Bovine Breeding and Dairy Development (NPBBDD)	State Livestock Development Boards	National Programme for Bovine Breeding and (b) National Programme for Dairy Development (NPDD)	Farmers
5	Rashtriya Gokul Mission	Department of Animal Husbandry, Dairying and Fisheries, GoI	Upgrade Indigenous breeds like : Gir, Sahiwal, Rathi, Deoni, Tharparkar, Red Sindhi ; Distribution of disease free high genetic merit bulls for natural service; create e-market portal for bovine germplasm	Encourage farmers / other organizations by giving awards like Gopal Ratna Awards, Kamdhenu Awards etc
6	Cattle and Buffalo Development : Scheme for Individual Beneficiaries	Department of Animal Husbandry, Dairying and Fisheries, Gujarat state	Scheme for subsidy on interest for establishment of 1 to 20 milch animal farm	Dairy animal keepers /farmers
7	Cattle and Feed Plant	Department of Animal Husbandry, Dairying and Fisheries, Gujarat state	Entrepreneur shall have land for feed plant, road connectivity, water resources, availability of electricity topography of land and data on climate etc.	Entrepreneurs
8	Dairy Products Manufacturing Unit	Department of Animal Husbandry, Dairying and Fisheries, Gujarat state	For setting up small scale dairy products manufacturing unit	Entrepreneurs
9	Silage Manufacturing Unit	Department of Animal Husbandry, Dairying and Fisheries, Gujarat state	For setting up small scale, medium scale and large scale silage manufacturing unit	Entrepreneurs
10	Assistance for round wheel chaff cutter	Department of Animal Husbandry, Dairying and Fisheries, Gujarat state	(i) Subsidy scheme for SC people round wheel chaff cutter Rs 1000.00, portable manger Rs 1000.00; Cattle shed Rs 10,000.00 to each beneficiary. (ii) Subsidy scheme for ST / General category farmers : 50% of actual cost or maximum Rs 1000.00 is given on purchase of round wheel chaff cutter.	Farmers

### III. CONCLUSION:

The progress of dairy sector is steady and hopeful to continue and India will remain leader in milk production in the world. The employment opportunities as well as growth of this sector will provide better livelihoods security under rural area. The use of available resources for better return will further add new feathers in the development of this sector.

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