

GROWTH OF DAIRY FARMING IN INDIA

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ABSTRACT

India has had a rich tradition in dairying since the time of lord Krishna. Dairying has been inherent in Indian culture, for centuries. Milk and milk products have always been an integral part of our consumption habits. In the vast field of Animal Husbandry, the contribution of dairying has been the most significant in terms of employment generation, as well as income generation. In post independence India cooperative dairying has been one of our major successful stories having a profound impact on socio-economic development of rural area. Agriculture and animal husbandry are the two main supporters on which the entire structure of the village life rests in India. Apart from land and irrigation, live stock is the largest productive resource in the rural economy of India. Milk and milk products, being the largest agricultural commodity contributing to Rs.1,50,000 crores to the country's GDP annually, play a vital role in agricultural economy. In India, dairying also provides sustenance to the millions of farmers distributed over 5,50, 000 villages. The cost of milk production in India is the lowest in the world which is about 70 percent of USA. However, the prices of dairy products are amongst the highest in the world. . Live stock contributes about 9 percent of the Gross Domestic Product. But an estimate shows that the organized sector handles only 15 percent of the milk produced while the 45 percent is still handled by the unorganized sector with remaining 40 percent retained by the producers for home consumption. Today India is the largest producer of milk in the world pushing united states to second place total milk produced in the county during 2015-16 is 155.5 million tones and the per-capita availability of milk is 337 grams per day. According to National Dairy Development Board demand for milk and milk products is estimated to increase at a compound annual growth rate of 5% from 138 million tones in 2014 to 200 million tones in 2022.

INTRODUCTION

India is predominantly an agrarian economy with mixed farming involving crop-livestock symbiosis, which has been a way of life since the dawn of civilization, and dairying is the most ancient occupation. More than 70 percent of the farmhouse holds (Marginal and small farmers) possessed a mere 21.5 percent of land holdings, while the rest 78.5 percent is possessed by large farmers (30%). The dairy sub-sector in the agricultural economy of our country is important for several reasons. Dairying is an important source of income and generate employment in rural sector. It meets and helps to meet the equity objective of rural

development through its contribution to the cash income of small and marginal farmers, also landless laborers' as the animal husbandry is closely interwoven with agriculture since the time immemorial. Milk and milk products are second largest contributors to the gross national product, with a turnover of Rs12000, /- crores per annum next only to paddy.

India has been the leading producer and consumer of dairy products in the world , since 1998 with a sustained growth in the availability of milk and milk products. Dairy activities form an essential part of the rural Indian economy, serving as an important source of employment and income. India also has the largest bovine population in the world. Moreover, nearly all of the dairy produce in India is consumed domestically, with the majority of it being sold as fluid milk. On account of this, the Indian dairy industry holds tremendous potential for value-addition and overall development. At present, India is the largest producer of milk in the world pushing united states to second place total milk produced in the country during 2015-16 is 155.5 million tones and the per-capita availability of milk is 337 grams per day. In India, agriculture sector provides livelihood among the food products, demand for milk increases relatively at higher role as education makes people conscious of the value nutritious food milk constitutes the most important source of nourishment for both vegetarian and non vegetarian, for old and young alike. Its importance to the consumers is next only to that of their staple food, therein lies the economic potential of dairying. According to National sample survey expenditure on milk and milk products constituted seven percent of total expenditure in urban area. In this Paper an attempt has been made to analyze the role of dairy farming in Indian Economy

Significance of the Milk and Milk Products

Milk and milk products, being the second largest contributor next to agricultural produce, play a vital role in the country's economy, Keeping in view of the role of co-operative in milk marketing it is quite essential to give serious thought in farming co-operatives for marketing of milk and milk products. Co-operatives play an important role in marketing of milk and milk products and give incentives to producers. Millions of farm families depend on the income from dairy for their livelihood. Dairying is an important sector that generate employment, with lower investment estimated that an investment of Rs.10 lakhs in dairying generates 290 man years of employment, whereas the same investment can generate only 120 man years of employment in crop production.

Nearly 70-75 million farm families are engaged in dairy activity. In India there are about 57 million cows, 39 million buffaloes and the strength of the dairy economy rests in the livestock population of 270 million, the largest in the world. Milk and milk products provide Dairy Farming is for poor people in India in the past but know the latest techniques of dairy farming make it profitable and

increase the scope in India. If the white revolution has become a reality in India, it is primarily due to the co-operative development in the sector. The importance of dairy farming is gaining widespread acceptability in India. The establishment of milk producers Co-operative Societies for collection of milk at the village level provided the impetus for the rapid growth in dairy farming. This will ensure the smooth disposal of milk to the demand center. The hallmark of Indian dairy farming is that it is built on a base of multitude of small dairy farmers with one or two dairy animals who pool their milk every day and received weekly payment for the same which helps them to eke out a living. Therefore it has strong welfare dimension attached to it.

Growth of Dairy Farming in India:

No attention was paid to the promotion of dairy farming in India before independence, apart from military dairies and few private dairies. Farmers were exploited by unscrupulous middlemen and private contractors and farmers were paid the lowest possible. The dairy industry in Kaira was established in 1964 was also no exception with the prevalence of exploitative market, in which traders were able to influence the price of their own advantage on the contrary, the total milk production in India was only 17 million tonnes in 1950's and we were heavily dependent on import of milk powder from New Zeland and Europe to fulfill the domestic demand. It all started in 1945, when farmers of Kaira district in Gujarat went on strike, protesting against the economic exploitation at the hands of contractors, who were collecting milk on behalf of the Britist Government.

The Britist government had granted monopoly over milk collection in Kaira district to a private firm called Polson, which, in turn, had hired contractors to do the job. In this time Sardar Vallabai Patel advised the farmers to form their own cooperatives. The strike succeeded in its objectives as monopolistic restrictions on procurement, were removed. However, the humble organization that started with two small village- level societies collecting only 247 litres of milk pe daywent on to become a billion liter idea. This is the genesis of Kaira District Cooperative Milk Producers Union better known to the world as "AMUL". The success of Kaira Co-operative Union ignited the spirit and thereafter, the cooperative movement spread like wildfire across the nation. Similarly, the government of India established the National Dairy Development Board (NDDB) in 1964 for the development of dairy industry and to replicate KDCMPU's pattern of Cooperative Dairying throughout the country on a comprehensive basis.

Milk Production in India

India continues to be the largest producer of milk in world. Several measures have been initiated by the Government to increase the productivity of livestock, which has resulted in increasing the milk

production significantly from the level of 102.6 million tonnes at the end of the Tenth Plan (2006-07) to 127.9 million tones at the end of the Eleventh Plan (2011-12). Milk production during 2014-15 and 2015-16 is 146.3 million tones and 155.5 million tones respectively showing an annual growth of 6.27%. The per capita availability of milk is around 337 grams per day in 2015-16. The production of milk and corresponding growth rate (%) per year from 1985-86 to 2015-16 and milk production increased to 200 million tones in 2022.

Milk production Statistics in India over a period (Million Tones)

SLNO.	YEAR	MILK PRODUCTION (million tones)	GROWTH annual Growth rate
1	1990-91	53.09	4.5
2	1995-96	66.2	4.56
3	2000-01	80.6	4.35
4	2005-2006	97.1	4.6
5	2010-11	121.8	5.09
6	2011-12	127.9	6.01
7	2012-13	132.4	3.52
8	2013-14	137.7	3.97
9	2014-15	146.3	6.2
10	2015-16	155.5	6.28
11	2021-2022	200	7.2

Source : Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture, Government of India.

The Important Dairy Centre's in the Country

Sl. No.	State	Centre of Dairy Industry
1.	Assam	Gauhati, Shilong.
2.	Punjab	Amritsar, Jind, Hissar, Dasuya, Gohna, Hudiana.
3.	Chandigarh	Chandigarh.
4.	UP	Agra, Aligarh, Aliahabad, Almora, Holdwani, Kanpur, Mathura, Varanassi, Lucknow, Bareilly, DehraDun

		Moradabad, Gorakhpur.
5.	Tamil Nadu.	Ootacamund, Kanyakumari, Coimbatore, Kodaikanal, Tiruchirapalli, Thanjarur, Maduroi, Erode, Madras, Chidambaram.
6.	Gujarat.	Baroda, Mehsana, ANANDi, Rajkot, Ahmedabad, Bhavnagar, Jamnagar, Juhagarh, Suredranagar, Surat.
7	Andra Pradesh	Vijaiwada, Hyderabad, Vishakpatanam, Warangol, Rajmahmundry, Guntar, Kurnool, Nellore, Chittur.
7.	Kerala.	Trivendrum, Calicut, Kottayam, Cannanore, Alleppey, Ernakulam, Palghat.
8.	Delhi.	Delhi.
9.	Maharashtra.	Bombay (Arey), Dhorwar, Aurangabad, Nagpur, Akola, Amaravati, Dhulia, Kolhapur, Nasik, Pune, Udgir, Miraj, Solapur, Ahmednagar, Kudigee.
10.	Madhya Pradesh.	Khandwa, Kanti, Raipur, Ratlam, Sagar, Chindawara, Guna, Rewaujjain, Bisalapur, Bhopal, Gwalior, Indore, Jabalpur.
11.	Orrissa.	Cuttack.
12.	West Bengal.	Hooghly, Haringhta,
13.	Rajashtan.	Jaipur, Udaipur, Bikaner, Jodhpur, Alwar, Bharapur.
14.	Karnataka.	Bangalore, Belguam, Gulbarga, Dharwad, Mysore, Mangalore, Davangere, Bhadravati.
15.	Bihar.	Bhagalpur, Gaya, Patna, Dharbhanga, Dhandabad, Ranchi, Barun.
16.	Haryana.	Jind, Biwani, Ambala.

State wise Milk Production in India

(000 tonnes)

State	10-11	11-12	12-13	13-14	14-15	15-16	16-17
All India	121848	127904	132431	137685	146314	155491	165404
Andhra Pradesh	11203	12088	12773	13007	9656	10817	12178

Arunachal Pradesh	28	22	23	43	46	50	53
Assam	790	796	800	815	829	843	861
Bihar	6517	6643	6844	7197	7775	8288	8711
Goa	60	60	61	68	67	54	51
Gujarat	9321	9817	10315	11112	11691	12262	12784
Haryana	6267	6661	7040	7442	7901	8381	8975
Himachal Pradesh	1102	1120	1139	1151	1172	1283	1329
J & K	1609	1614	1631	1615	1951	2273	2376
Karnataka	5114	5447	5718	5997	6121	6344	6562
Kerala	2645	2716	2791	2655	2711	2650	2520
Madhya Pradesh	7514	8149	8838	9599	10779	12148	13445
Maharashtra	8044	8469	8734	9089	9542	10153	10402
Manipur	78	79	80	82	82	79	79
Meghalaya	79	80	81	82	83	84	84
Mizoram	11	14	14	15	20	22	24
Nagaland	76	78	79	81	76	77	79
Orissa	1671	1721	1724	1861	1903	1903	2003
Punjab	9423	9551	9714	10011	10351	10774	11282
Rajasthan	13234	13512	13946	14573	16934	18500	20850
Sikkim	43	45	42	46	50	67	54
Tamil Nadu	6831	6968	7005	7049	7132	7244	7556

Tripura	104	111	118	130	141	152	160
Uttar Pradesh	21031	22556	23330	24194	25198	26387	27770
West Bengal	4471	4672	4859	4906	4961	5038	5183
A&N Islands	25	26	21	14	16	15	16
Chandigarh	45	45	44	44	44	43	36
D&N Haveli	11	11	11	11	9	9	8
Daman & Diu	1	1	1	1	1	1	1
Delhi	480	502	287	284	280	281	279
Lakshadweep	2	2	2	6	4	3	3
Pondicherry	47	45	47	47	48	48	48
Chhattisgarh	1029	1119	1164	1209	1232	1277	1374
Uttarakhand	1383	1417	1478	1550	1565	1656	1692
Jharkhand	1555	1745	1679	1700	1734	1812	1894
Telangana	-	-	-	-	4207	4442	4681

Source : Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture, Government of India.

Current Trends in Dairy Industry

There has been a long term tendency for world milk production to grow steadily. This trend has been interrupted during the last 3 years, mainly due to the decline in milk production in Central Europe and the countries that made up the former Soviet Union, notably Russia. These reductions may be attributed to the disruption caused by the economic changes, which followed the political changes of 1989. An important influence was the removal or reduction of food subsidies which had insulated consumers from the relatively high costs of production under community system. American countries represent a bit more than one-fourth of the 455 million tonnes of cow's milk produced in the world. This share has been slowly increasing over the last few years, with increase in all major countries except Canada, with its long

standing production quota programme, Canada's experience parallels that of the European Union overall, forecast is for an increase in world milk production from 451 million tones in 1993 to 674.48 million tones by year the 2017. This long term trend is likely to be made up by following steps.

- i) Increased production in developing countries for their own use. Increased production export by producers at world market prices, such as New Zealand and Australia.
- ii) Reduced production in the E.U. in responses to its GATT commitments in relation to reduced. Export's and Increased, Imports.
- iii) Relatively static production elsewhere in the major developed countries, such as the united states.

Challenges Before Dairy Industry

India has several distinct breeds of cattle and buffaloes suitable to different agro climatic and ecological zones. However, 80 percent of the animals are of non-descript type. Three different strategies for improving the productivity of dairy animals are being adopt, the distinct indigenous breeds of cattle are being improved through selective breeding programmes. As murrah is the best bufflo breed in the world, selective breeding programmes have been carried out to improve its genetic potential. Agro-industrial feeds like manua cake, neem cake and sal seed meals have been developed for providing cheap alternative feed to growing calves. The development of cheap good quality feed is going to be a great challenge for scientists in the coming years.²⁶ Lack of proper feed resources is one of the major constraints in fully exploiting the genetic potential of the animals for milk production. Majority of the livestock holders cannot afford to provide expensive feed ingredients to their animals nor can they spare land for producing fodder. Hence, alternative strategies have to be worked out to improve the nutrient availability through the judicious use of agro industrial by-products and other non-conventional feed resources in the years to come.

The challenges of Dairy in Next Millenium:

Dairying in the Indian economy can be gauged from the fact that milk is the single largest item which is estimated to fetch Rs.450 billion way ahead of rice and wheat. The estimated value of the milch animals alone is around Rs.35 billion. Dairy animals also contributes to hides, skin and dung valued at Rs.60 billion. Dairy sector provides additional income and generates job opportunities for 80 billion farmer families more than 70% of marginal, small farmers and landless labourers maintain dairy animals to supplement their income. Women contribute 71% of the labour force to dairy as compared to their share of 33% in crop farming. India now stands number one in milk production in the world.

The annual output of Dairy industry is Rs.1,80,000 crores. Production of milk rose from 20.7 million tonnes during the year 1969-70 to 74.3 million tonnes during 1998-99 and it increased to 155.5

million tonnes in 2015-2016 and it has increased to 200 million tones. Even though production of milk increased tremendously in recent years the organised sector handles only 15%, rural producers retain 40%, while 45% is still handled by traditional sector, out of 15% handled by organised sector, only 50% of it i.e., 7.5% of the total milk production is handled by private sectors alone. In India, 52% of the milk is produced by buffaloes, 45% by cows and only 3% of the milk is contributed by other species namely Goat, Sheep etc. India has the largest cattle population in the world i.e. 20.2%. Operation flood has played a wonderful role in development of dairying. There are 1,00,000 dairy milk cooperative societies in 280 districts as per AMUL pattern and at present this sector grows at the rate of 6.5% per annum. India's dairying has no match in the world.

Potential of Indian Dairy Industry

Indian dairy industry has made incredible evaluation for the last several years. We are proud to say that India holds number one position in the world in milk production with 200 million tonnes (2021-2022). This production brings with it enormous challenges before the dairy industry to procure, chill, pasteurize, process, package and distribute milk across the length and breadth of country. This also imposes great responsibilities on the Indian Dairy industry to improve the quality of milk and open new avenues / opportunities for employment. With 198 million cattle and 86 million buffaloes India has the largest population of milch animal in the world. They constitute more than 50 percent of the cattle in the world unlike other milk production countries, 54 percent of India's milk comes from buffaloes, which is endowed with unique processing qualities. Buffalo milk is an advantage to India, because buffaloes milk especially appropriate for commercially important dairy products such as Mozzarella, Cheese, Casein, Cream, Paneer, Khao, etc. India may emerge as the leading supplier of these products in world market. Indian dairy industry has to derive maximum benefits of the uniqueness and positive virtues of buffalo milk to obtain the competitive edge in the global dairy market. One important secret of India's dairy development programme is the involvement of milk producers in setting up their own cooperatives for production, procurement, processing and marketing. The peculiar feature of the dairy cooperative system is that it has the advantage of hardworking farmers and enlightened professionals to manage the system. Co-operative dairying got impetus when the AMUL was established and ANAND model became a popular concept throughout the country. Though we tried to establish ANAND pattern cooperatives in almost all parts of the country it was not that much effective in its true sense in this context serious and concentrated efforts need to be exerted to make the cooperative system competent to face the new challenges. In other words a redesigning of cooperatives has to be indicated. The NDDDB's role in this respect is crucial.

Dairying has played a prominent role in strengthening the rural economy. It has been recognized as an instrument to bring about socio-economic transformation by helping the landless and marginal farmers. For sustaining further development, Nation's dairy industry would have cope with the rapid transformation that are taking place in the world economies consequent to the GATT Agreement. Inter-national trade is being strongly regulated by the WTO guidelines. Newer and stricter sanitary and phytosanitary standards are being formed for regulating quality parameters of the export products. Under these newly emerging circumstances, practices for production and processing milk that influence the quality cannot stay in variance with the international standards.

Potential of Indian Dairy Products:

India would have to critically assess the changing global scenario, if the Nation's Dairy industry wishes to consolidate the opportunities for faster growth. One such area for growth is export of traditional milk products for the ethnic populations settled in North America, middle East and South-East Asia. The Australian Dairy Board is already way ahead in diversifying in this area, where in fact India should have taken the lead. Imports of dairy products has sharply declined, particularly during late eighties and early nineties and its share also came down at the same time production of milk increased due to the success of operation flood programme, had a favourable impact in reducing imports of dairy products to a considerable extent. At present, India is exporting malted milk foods, ghee, butter, cheez to countries like Bangladesh, U.A.E., Nepal, Shrilanka, Oman, Bahrain, worth of Rs.85 crore. A wide range of India genous products some of which have region specific connotations as well as those others that have national complexion may be classified on the basis of the process employed for their manufacture. For sustaining further development, Nation's dairy industry would have to cope up with the rapid transformations that are taking place in the world economies consequent to the GATT agreement. This is therefore very opportune time to critically examine the newly emerging world scenario, so that appropriate policy making process could be initiated, to provide the crucial support for the Nation's dairy development programmes.

Future Prospects of Indian Dairy Sector:

There is a great responsibilities on the Indian Dairy (Industry) sector are to improve the quality of milk, milk products and open new avenues; opportunities for employment, as well as development of rural farm sector and sustain growth of economy. A recent study has estimated that there are nearly 36 million unemployed people in India. As per the vision of our former Hon'ble President Dr. A.P.J. Abdul Kalam, India should be developed nation by 2020, with rising income levels and serious efforts to improve the milch animal, it can be estimated that India would produce 175 million tones and 200 million tones of milk by the year 2015 and 2020 respectively from present production figure of 91.5 million tones. This will require a

highly efficient network of cold storages, packaging and distribution, so that processed milk and milk based products can reach the vast consumer base in an efficient and cost effective manner.

In the coming years with the implementation of the GATT treaty, the subsidies that are being offered in many of the dairy developed countries like America, Australia and Europe will have to be discontinued. Under such situation, India will have the advantage of being most cost competitive country for purchase of milk.. In this direction as early taken steps to develop dairy sector are not sufficient to fast growth still government has to take challenged steps.

Conclusion

Dairy farming is a potentials sub-sector for generation of income and employment, 75-80 percent of farm families of small farmers, marginal farmers and landless labourers are employed in this sub-sector. Dairy generates employment with least unit cost of employment. The Indian dairy sector registered a spectacular growth rate of five percent per annum during the last three decades and as a result, India emerges as the world's largest producer of milk. The current level of milk production in India is 200 million tones which has come to First place in the world milk production. White revolution has indeed brought about a comprehensive development of the dairy industry in India.

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