



Review Article

INCREASING TRENDS IN DAIRY SECTOR IN INDIA

Hanish Sharma¹, Vipin Kumar¹, Heigo Pal¹, V.M. Wadhawan¹

¹Regional Disease Diagnostic Laboratory (North Zone), Jalandhar (India)-144001

Correspondence should be addressed to **Hanish Sharma**

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ABSTRACT

Livestock production is the vital sector which action a major source of income to the impoverished rural households throughout the world. Livestock equip people with food, income, draught power and fertilizer and act as the major livelihood means of millions of our country, where crop farming faces challenges India is one among the fastest growing economics of the world and mainly depends on the agrarian sector as a tool for progress. Dairy sector is emerging as the highest contributor to the agricultural wealth of India, surpassing even cereals. India is the highest milk producing country in the world contributing 16% of the world production. The annual milk production in India has reached 119.44 million tonnes in 2011 against the 23 million tonnes in 1971 and the share of this sector is also increasing year by year.

KEYWORDS: Dairy sector, livestock, growth.

INTRODUCTION

Dairy Industry is of crucial importance to India. The country is the world's largest milk producer, accounting for more than 16% of world's total milk production. It is the world's largest consumer of dairy products, consuming almost 100 per cent of its own milk production. Dairy products are a major source of cheap and nutritious food to millions of people in India and the only acceptable source of animal protein for large vegetarian segment of Indian population, particularly among the landless, small and marginal farmers and women. Dairying has been considered as one of the activities aimed at alleviating the poverty and unemployment especially in the rural areas in the rain-fed and drought-prone regions. In ancient and middle ages the place of cattle in the economic and social life of people gained importance. By the time the Britishers come to advent India; the little republics (villages) were flooded with milk animals, occupying a unique position among the world nations. India has emerged as the largest world producer of milk with an annual production of 100 million tonnes in 2007, surpassing the production of 88 million tonnes by USA in that year. The milk production in the country quadrupled from 23 million tonnes in 1973 to

100 million tonnes in 2007 to 119.44 million tonnes in 2011, with the remarkable annual growth rate of 4.5 per cent as against the world's average of about one per cent. Consequent to the New Economic Policy, 1991 and the recent amendments to the Milk and Milk Products Order (MMPO) 1992, India offers a level playing field to Indian and foreign investors alike to invest in dairying both with a view to serve domestic and export markets. India got further boost with the signing of Uruguay Round Agreement on Agriculture (URAOA) in 1994, eventually culminating in the establishment of the World Trade Organization (WTO) in 1995 (Reddy, 2010). The dairy industry was de-licensed in 1991 and the private sector, including Multi National Companies (MNCs), was allowed to set up milk processing and product manufacturing plants. As efficiency is the key factor in privatization policy. The Government, Social Development agencies, the dairy sector highlight the fact that India holds the world's second largest cattle population and is the world's largest milk-producing country. The dairy sector is characterized by a smallholder production system of village-based production units often consisting of one to three milking animals. The majority of milk produced is consumed on the farms where it is produced or distributed through informal channels. Formal markets receive milk deliveries from millions of smallholders coordinated

through an extensive cooperative structure (Babcock Institute 2006). Government policies and budgetary allocations promote a model where dairy is one of the constituents of the farmer's livelihood basket and most often complements crop production. Government schemes related to dairy have thus focussed on improving livelihoods rather than maximising milk production per se. Milk production though has certainly gone up, though that is more because of the sheer size of the Indian dairy herd (including buffalos) than productivity enhancement. This structure of the dairy sector has welfare implications that are discussed in the report. The early 1990s saw deregulation of the dairy sector making it possible for private players to set up dairy units fairly easily. Subsequently, the regulatory climate has been further relaxed creating the potential for the private organised sector to participate actively in the dairy arena. This development, viewed in combination with rapidly changing consumption patterns and increases in disposable incomes, particularly in urban areas, implies that there is a huge spurt in demand for dairy products that the existing dairy model may not be able to meet. Projections made by dairy industry watchers predict that the Indian dairy pie may be large enough to allow the cooperative as well as the corporate players to operate in tandem.

GLOBAL DAIRY SCENARIO

Trend in World Milk Production

In the world about 2450 million people are involved in agriculture, out of which probably two-thirds or even three-fourths are completely or partially dependent on livestock farming. Until recently many countries have considered milk too bulky and perishable to make long-distance trade feasible. Therefore, they developed capabilities satisfying domestic liquid milk requirements through domestic dairy industries or depended on milk product imports, or a combination of both. For these vary reasons, most dairying nations have a complex mechanism to regulate their dairy industries through interventions, financial supports and physical controls. Cooperatives dominate dairy industry. In the United Kingdom, all the milk produced by farmers is procured by cooperatives. There are no private sector dairy plants in New Zealand. A total of 90 per cent of the dairies in former West Germany are cooperative, and in Denmark, Netherlands and Sweden the entire dairy industry is organized on cooperative lines. In the USA, 70 per cent of the dairy industry is in cooperative sector. Dairy programmes are subject to significant government participation and regulation than most other domestic agricultural industries in the USA. There are several laws to encourage dairy cooperatives and protect the interests of the farmers. It is heartening to note that India's percentage share in total world milk production has kept upward trend, competing with USA for top position. The combined share of top ten countries in milk production covers around 70 per cent throughout the reference period. In 2000 milk production was 578.96 million tonnes which was increased to 727.05 million tonnes in 2011

Table 1:World milk production from 2000 to 2011

Year	Production (million tonnes)
2000	578.96
2001	589.11
2002	606.20
2003	617.72
2004	631.03
2005	649.90
2006	668.82
2007	685.17
2008	697.80
2009	702.35
2010	719.22
2011	727.05

Source: FAOSTAT Production Data,2012.

Trend in Livestock Population

Populations and income growth are fueling an ongoing trend towards greater per capita consumption of animal protein in developing countries, says the report, *World Livestock 2011*. Livestock Population in world is on rise in the last decade. In 2000 it was 1477.37 millions and in 2011 it rose to 1595.17 millions as shown in table 2.

Table 2: World Livestock Population from 2000 to 2011:

Year	Population (in millions)
2000	1477.37
2001	1480.98
2002	1494.12
2003	1510.42
2004	1526.98
2005	1544.95
2006	1564.44
2007	1573.35
2008	1594.76
2009	1607.12
2010	1620.30
2011	1595.17

Source: Basic Animal Husbandry & Fisheries Statistics, Ministry of Agriculture (GOI), 2013

INDIAN SCENARIO

Share of Livestock sector in GDP

India has one of the largest livestock population in the world. Fifty percent of the buffaloes and twenty percent of the cattle in the world are found in India, most of which are milk cows and buffaloes. Dairy development in India has been acknowledged the world over as one of modern India's most successful developmental programme. Today, India is the largest milk producing country in the world. In 2004-05 the share of livestock sector in GDP was 4.02 % while in 2011-12 the share was 3.92 % of the total GDP.

Table 3: Share of Livestock sector in GDP at current prices

Year	GDP (in Rs. Crore)	GDP (Livestock Sector)	
		Rs. (in crore)	% share
2004-05	2971464	119333	4.02
2005-06	3390503	127518	3.76
2006-07	3953276	142695	3.61
2007-08	4582086	169296	3.69
2008-09	5303567	200440	3.78
2009-10	6108903	237059	3.88
2010-11	7266966	276105	3.80
2011-12	8353495	327838	3.92



Source: Basic Animal Husbandry & Fisheries Statistics, Ministry of Agriculture (GOI), 2013

Trend In Milk Production

The milk production was almost stagnant between 1947 to 1970 with an annual growth rate of merely one percent which has since registered a vigorous growth of over 4.5% per annum after the year 1970. The production of milk in India has been increasing steadily as shown in Table 4. The major milk producing states are UP, Punjab, Rajasthan, M.P, Maharashtra and Gujarat. Number of milk products manufacturing Plants have come up in these states for Processing of milk. The milk production in 2000-01 was 80.6 million tones which rose to 127.9 million tones in 2011-12.

Table 4: Indian Milk Production from 2000-01 to 2011 -12

Year	Production (million tonnes)
2000-01	80.6
2001-02	84.4
2002-03	86.2
2003-04	88.1
2004-05	92.5
2005-06	97.1
2006-07	102.6
2007-08	107.9
2008-09	112.2
2009-10	116.4
2010-11	121.8
2011-12	127.9

Source: Basic Animal Husbandry & Fisheries Statistics, Ministry of Agriculture (GOI), 2013

Per capita availability of milk

Milk is said to be the most complete food item because of its great biological value as it contains a variety of nutrients and these nutrients in milk help make it nature’s most nearly perfect food. Improving human nutrition plays an important role to achieve food security. Dairy products have a unique contribution to nutritional status as well as health status of the household members. Milk provides relatively quick returns for small-scale livestock keepers. It is a balanced nutritious food and is a key element in household food security. On the other hand, milk matter plays a very important role in rural economy. It provides income and employment not only to the weaker section of the society but also to the farming community. In this way milk matter improves socio-economic condition of village based population, of which a sizeable portion is living below poverty line. The per capita milk availability in India are shown in Table 5. The Table 5 shows the data about Per Capita Milk Availability in India during the year 2000-01 to 2011-12. The Table shows that all India average of per capita during the year 2000-01 to 2011-12 was 217 to 290 gms / day. This shows lower status in the country when compared to New Zealand’s status in per capita availability of milk which was 10989gms/day.

Table 5: Per capita availability of milk in India

Year	Per capita availability (gram/day)
2000-01	217
2001-02	222
2002-03	224
2003-04	225
2004-05	233
2005-06	241
2006-07	251
2007-08	260
2008-09	266
2009-10	273

2010-11	281
2011-12	290

Source: Basic Animal Husbandry & Fisheries Statistics, Ministry of Agriculture (GOI), 2013

Trend In Livestock Production

India is rich in its livestock wealth. It accounts for nearly 15.8% of the world cattle population, more than half of the world buffalo population. The entire cattle production of the country is for milk and draught purposes only. While the females are used for milk the bullocks are the mainstay of agricultural operations, especially among small land holders. In 1992 the livestock population was 288.8 millions which rose to 321 millions in 2012.

Table 6: Trend in Livestock Population

Year	Population (in Millions)
1992	470.86
1997	485.39
2002	485.00
2007	529.70
2012	512.06

Source: Basic Animal Husbandry & Fisheries Statistics, Ministry of Agriculture (GOI), 2014

Feed and Fodder Base

There is an alarming gap between demand and supply of feed and fodder in the country. The National Commission on Agriculture (1976) has estimated the demand of fodder in the country for the year 2000 A.D at 256.8 million tonnes dry fodder and 575 million tonnes green fodder. The future scenario of demand and supply position, as shown in the Tenth Plan Working Group Report of the Planning Commission on Animal Husbandry and Dairying, reveals a huge deficit of green fodder in the country in the near future. The available fodder can meet the demand of only 46.7 per cent of the total livestock. Estimated demand and supply of green and dry fodder in the country is given in the following table

Table 7: Feed and Fodder demand and supply projection:

Year	Supply		Demand		Deficit as percentage of demand	
	Green	Dry	Green	Dry	Green	Dry
1995	379.3	421	947	526	59.95	19.95
2000	384.5	428	988	549	61.10	21.93
2005	389.9	443	1025	569	61.96	22.08
2010	395.2	451	1061	589	62.76	23.46
2015	400.6	466	1097	609	63.50	23.56
2020	405.9	473	1034	630	64.21	24.81
2025	411.3	488	1170	650	64.87	24.92

Source: Basic Animal Husbandry & Fisheries Statistics, Ministry of Agriculture (GOI), 2013



The projected gap between demand and supply of green and dry fodder invites an attention to frame perspective planning, time bound strategies and concerted efforts to meet this challenge.

Animal Health Care

With the introduction of extensive cross breeding programmes and improvement of quality of cross bred cattle, the susceptibility of these to various diseases has increased. In order to reduce morbidity and mortality, a network of 26,540 polyclinics/hospitals/dispensaries and 25,430 veterinary and centres supported by 250 disease diagnostic laboratories are functioning in the country. These institutions employ 36000 professional staff and over 70,000 para veterinarians.⁵ For the production of vaccines there are 26 veterinary vaccine production units. The limited emphasis on preventive services contributes to India's inability to eradicate animal epidemics which limits the country's competitive advantage in the global market.

Breeding support

Regarding breeding infrastructure India is the largest in the world with 64 frozen semen bull stations and more than 54,000 artificial insemination centres. Artificial insemination conducted in the country increased from 36205 thousands in 2007-08 to 41165 thousands in 2011-12. Due to poor quality semen produced by most of the semen stations in the country, the conception rate ranges from 20 per cent to 45 per cent only whereas in the developed countries the rate is more than 50 per cent. By the end of 2010 there were about 4.2 artificial insemination centres/10000 breedable bovines in the country with Kerala appearing on the top of the list with 10.3 artificial insemination centres. Tamilnadu is on top with 6035 thousands AI conducted in a 2011-12.

CONCLUSION

In India the dairy sector is a fast growing sector of the economy. An analysis of trends indicates that growth in this sector has far exceeded the growth in cereal production mainly due to rapid urbanization, rise in levels of income and less proportional growth in the prices of livestock products. The growth of the sector implies far reaching results in rural India in poverty alleviation and in improving the health status of rural people. In the emerging liberalised global scenario, trade-distorting agricultural policies have been the focus of the GATT multilateral trade negotiations. With the liberalisation of agricultural trade under the new GATT regime, the heavy subsidies prevalent in the dairy sector in the countries of the EU as well as in the USA will have to be brought down in the next few years. The competitive advantages of the Indian dairy industry are then considered to be substantial. With substantial and continued investment in building up milk production, India can emerge as a major exporter of dairy products and technologies in the next few decades.

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