



MILK PRODUCTION AND FOOD SECURITY IN INDIA AND KARNATAKA

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Abstract: Food security essentially means that all people at all times have access to safe and nutritious food to maintain health and to lead active life. Food manufacturing sector is one of the important pillars in achieving food security with many different manufacturing activities including milk production. Milk is the best food for humans, the importance of milk producing after food awareness and individual incomes, which in turn led to an increase in demand. Milk production is an important source of income for the rural poor, unfortunately the condition of dairy sector in India. In the present study an attempt has been made to examine the Milk production and the per capita availability of milk in India and Karnataka. The study is based on secondary data collected from the various literature has also been gathered from National Dairy Development Board, published articles, books and other reports.

Key words: Food, Milk, Production.

INTRODUCTION

Food production is the base for food security. Food is one of the three basic necessities required to live. The food security has been evolving over the last few decades and there is a substantial debate between academics, policy makers and NGOs on what constitutes food security and how it can be ensured at global, regional, national, state, and individual levels. Food security stands as a fundamental need, basic to all human needs and the organization of social life. Food manufacturing sector is one of the important pillars in achieving food security with many different manufacturing activities including milk production. Milk is the best food for humans, the importance of milk producing after food awareness and individual incomes, which in turn led to an increase in demand. This importance is because it

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contains many elements necessary, in addition to contain many vitamins and minerals. Milk consists of farm animals like buffalo's, cows and goats milk products, Milk produce represents one of the major components of income.

Milk is indispensable to the growth of the child and to the health of the adult. For the infant, milk is a perfect food, for the growing child, milk and the milk products of the dairy industry are essential foods, and for adults and expectant mothers they are the most important foods. In India, it is generally observed that in the north and west the cow are better milkers, but as one gets to the south and east the milk producing quality deteriorates. The importance of livestock sector in general and of dairying in particular hardly needs emphasis in a country like India. The major and more widely known contribution of livestock sector is in terms of production of milk and milk products. Apart from milk, this sector contributes meat, hides, skins, organic manure and draft power. Milk production activity takes place on individual farms of varying sizes. This characteristic of milk production system coupled with perishable nature of milk imposes severe constraints on devising improved system for assembling, processing and distribution of milk and its products.

REVIEW OF LITERATURE

Sheikh, *et al.*, (2017), that conclude the human populations around the globe largely depend on livestock for multiple purposes such as meat, milk, and other dairy products and wool as well as other purposes such as transport, draft and provision of fertilizers. Different environmental variables like temperature, humidity, wind speed, radiations directly influence on production and reproduction performances of livestock. Climate change is not only responsible for decrease in reproductive efficiency like decrease oocyte and sperm viability, decrease conception rate, decrease fertility but also decrease milk production too in terms of quantity and quality both. Mahrous (2016) studied analyzing the sources of milk production, study the factors affecting milk production. As well as, the policies of dairy product in Egypt, examining the role of dairy in achieving food security and estimate the size of the projected gap of animal protein in 2025. And the results indicated that, dairy product ranking the second in contributing to the value of animal production (26.66% of the total animal production). The equation of general time trend for dairy development in Egypt indicated that the livestock of cows, Buffalo and goats took a general trend statistically significant at 0.01 percent. The policies that help to increase milk production in Egypt clarify that, apparent increase of livestock loans size and the moral link between the size of loans and the increasing productivity of dairy

product. Sreenivasaiah. K and Chellakumar (2016), studied the role of the milk cooperatives in village development through the recovery and growth of the overall dairy chain in Karnataka. The study reviews and analyzes the outcomes of the milk cooperative Development Program implemented by the Karnataka Milk Federation Marketing Assistance Program and continued by the Center for Agribusiness and village Development. They identified and discuss the forms of vertical integration occurring in the dairy sector of the State and concentrates on several important issues viz., contractual mechanism between farmers and cooperatives and farmers and processors, problems and challenges milk producers face, farm social investments. Frank Rathana Kumar (2015), concluded that the dairy cooperatives have to play a major role in our nation's economy in the years to come. The milk production is set to achieve a new boom. The industry's major contribution in providing newer avenues for employment, both direct and indirect, and its role in improving the nutritional standards of our people also add to the importance that needs to be attached to this sector in the 21st century. Bhavani (2013), in her paper deals with different aspects of ensuring high productivity and production without associated ecological harm for ensuring adequate food availability. By mainstreaming ecological considerations in technology development and dissemination, we can enter an era of evergreen revolution and sustainable food and nutrition security. Public policy support is crucial for enabling this. Ghosh and Maharjan (2004), conducted the chronological development of Bangladesh Milk Producers' Cooperative Union Limited; extension of its areas and activities towards dairy development in Bangladesh and analyses some aspects of its performance in milk production and household income. They found BMPCUL became the dominant milk producing organization, marketing more than 60 percent of the total marketed milk in Bangladesh. Within last 10 years, milk collection capacity of BMPCUL has increased drastically.

OBJECTIVES AND METHODOLOGY OF THE STUDY

The present study was carried out by the following objectives are

- To study the milk production in India and Karnataka
- To study the per capita availability of milk in India and Karnataka

The study made use only secondary data have been collected from the various literatures has also been gathered from National Dairy Development Board, published articles, books and other reports and the study period during 2001-2002 to 2018-2019. The simple Descriptive Statistics used to analysis the data.

ANALYSIS AND DISCUSSION

The first top countries in the world producing maximum milk are India, United States of America, Pakistan, China, Brazil, Germany, and France in 2017 (Table No. 1). To maintain our first position in milk production, India will have to face healthy competition from other countries. For this, only producing largest quantity is not sufficient, but the quality of milk and other factors also need to be borne in mind, the "operation flood" programme will have to be supported by quality improvement and quality maintenance.

Table 1: Global Level Top Countries of Milk Production in 2017

<i>Countries</i>	<i>Milk Production (Million Tonnes)</i>
India	176.27
United States of America	97.76
Pakistan	44.29
China	34.87
Brazil	33.74
Germany	32.69
France	25.26

Source: <http://www.nddb.org/information/stats/percapitacomsp>

MILK PRODUCTION IN INDIA

Dairying provides livelihood to millions of Indian farmers and generates additional income and employment for a large number of families in the countryside. Dairy industry is the single largest contributor to India's GDP and with its profound social impact, involves over 80 million small farming households. Milk production in India has shown a rising trend ever since the inception of 'Operation Flood (OF)' programme in 1970-71, India has attained the first rank in milk production in the world. Milk has been traditionally considered to be complete food more so in India than other countries of Asia. Dr. Kurien, has contributed enormously in this area and there has been a noteworthy increase in milk production. The cooperative movement founded by Dr. Kurien was not successful in other states the way it was in Gujarat and thus other strategies to increase the milk production need to be induced. An average Indian diet hardly provides 500 mg of calcium on daily basis as compared to the Western diets where 1000-1500 mg of calcium is easily available on a daily basis. Further the intake in poor households is even low. Milk is not only a good source of calcium but also a good source of protein which further helps in calcium absorption too.

Table 2: Milk Production and Per Capita Availability of Milk in India

<i>Year</i>	<i>Production (Million tonnes)</i>	<i>Per Capita Availability (gms/day)</i>
2001-02	84.4	222
2002-03	86.2	224
2003-04	88.1	225
2004-05	92.5	233
2005-06	97.1	241
2006-07	102.6	251
2007-08	107.9	260
2008-09	112.2	266
2009-10	116.4	273
2010-11	121.8	281
2011-12	127.9	290
2012-13	132.4	299
2013-14	137.7	307
2014-15	146.3	322
2015-16	155.5	337
2016-17	165.4	355
2017-18	176.3	375
2018-19	187.7	394
CGR	4.80	3.41

Source: <http://www.nddb.org/information/stats/percapitacomsp>

It is observed from the table 2 shows that per capita availability of milk (Gms/Day) showed upward trend in India i.e. from 222gms and 394gms between 2001-02 and 2018-19, CGR is 3.41 percent and production of milk increased from 84.4 to 187.7 million tons during the same period, CGR is 4.51 percent.

MILK PRODUCTION IN KARNATAKA

Karnataka is one of the major milk producers in Indian union. Being primarily an agrarian economy, which is undergoing a considerable transformation from mere crop production to livestock products, Karnataka state is having enormous potential for livestock output, including milk production, as the majority of the farmers are small and marginal farmers, purchasing livestock economy for their livelihood. Rural economy of Karnataka is blessed with favourable environmental condition with favourable forest coverage are and congenial atmosphere for the promotion of livestock economy particularly dairying goat and sheep husbandry activities. In view of the declining and negligible land holdings, the livestock economy has got the potential to promote the lot of the economic conditions

of small and marginal farmers besides improving their nutritional level and good health.

Table 3: Milk Production and Per Capita Availability of Milk in Karnataka

<i>Year</i>	<i>Production ('000 tonnes)</i>	<i>Per Capita Availability (gms/day)</i>
2001-02	4,797	249
2002-03	4,539	229
2003-04	3,857	190
2004-05	3,917	194
2005-06	4,022	197
2006-07	4,124	199
2007-08	4,244	203
2008-09	4,538	215
2009-10	4,822	226
2010-11	5,114	237
2011-12	5,447	244
2012-13	5,718	262
2013-14	5,997	272
2014-15	6,121	276
2015-16	6,344	282
2016-17	6,562	291
2017-18	7,137	313
2018-19	7,901	344
CGR	3.78	2.80

Source: <http://www.nddb.org/information/stats/percapitacomsp>

It is observed from the table 3 shows that per capita availability of milk (Gms/Day) showed upward trend in Karnataka i.e. from 249gms and 344gms between 2001-02 and 2018-19, CGR is 2.80 percent and production of milk increased from 4,797 to 7,901(000 tonnes) during the same period, CGR is 3.24 percent.

CONCLUSION

The results indicated that, in the year 2018-19 food production is 176.27 million tons in India. India occupies the first position in milk production and India is one of the largest milk producing countries in the world. The country's milk production increased from around 84.4million tons in 2001-02 to 187.7million tons in 2018-19. The per capita availability is 394gms/day in 2018-19. The State of Karnataka was placed tenth position in the country in overall milk production in the year 2018-19. Karnataka i.e. from 249gms and 344gms between 2001-02 and 2018-19 and production of milk increased from 4,797 to 7,901(000 tons) during the same period.

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