

History and Development of Indian Dairy Sector

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Abstract

This paper is briefing about the past and development of Indian dairy sector through reviewing relevant research findings. This article gives an idea about operation flood and growth of dairy cooperative societies headed by farmers unions.

Keywords: Operation flood, cooperative societies

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INTRODUCTION

India has emerged today as the largest producer of milk in the world. This has been achieved through “operation flood” which created strong linkages between the rural producers and urban consumers. Cooperative movement started in India in the last decade of the 19th century for improve economic status of farmers. The emergence of dairy cooperatives has played a very significant role in the procurement, processing and marketing of milk and dairy products. Actually, the growths of cooperative unions have acted as a cementing material for empowerment of Indian dairy sector [1].

Land Marks of Dairy Development in India

The foundation for development of India’s dairy industry was the cooperative movement in the state of Gujarat. In 1952, the Kaira District Cooperative Milk Producer’s Union (now the Gujarat Cooperative Milk Marketing Federation) gained the right to supply the Bombay market with fluid milk. Village cooperative societies collected and cooled milk from tens of thousands of small dairy farmers throughout the state. District unions consolidated society shipments and operated manufacturing plants to handle fluid surpluses. In the late 1960s, Dr. V. Kurien designed the concept of ‘Operation Flood’ with the purpose of creating a white flood of milk throughout India by widely replicating and financially supporting the Anand model. Operation flood was carried out in three stages such as first, second and third phases. The operation took India from being a milk-deficient nation, to the largest milk producer in the world [2, 3].

HISTORY OF AMUL

‘AMUL’ means “priceless” in Hindi. The brand name “AMUL” was adopted from the Sanskrit word “AMOOLYA”, (meaning precious). AMUL (Anand Milk Union Limited), formed in 1946 which was key to open new door for Indian dairy history. It is managed by Gujarat Cooperative Milk Marketing Federation Ltd. (GCMMF). AMUL is based in Anand. This cooperative, the Kaira District Co-operative Milk Producers Union Ltd. began with just two village dairy cooperative societies and 2471 of milk and is today better known as AMUL Dairy. Gujarat Cooperative Milk Marketing Federation Ltd., which markets the popular AMUL brand of milk and dairy products, has registered a provisional turnover of Rs. 23,005 crores for the financial year 2015–16 which ended on 31st March [2].

Table 1: Dairy Brands of India [4–7].

Brand	Union	Sate	Established Year
Milma	Kerala Cooperative Milk Marketing Federation (KCMMF)	Kerala	1980 [5]
Aavin	Tamilnadu Cooperative Milk Producers Federation	Tamil Nadu	1981 [4]
Nandini	Karnataka Milk Federation)	Karnataka	1974 [6]
Verka	Punjab State Cooperative Milk Producers’ Federation Limited (MILKFED)	Punjab	1973 [7]

The glory of AMUL has become a great platform for opening a new era for Indian dairy through operation flood, which gave most powerful fuel to Indian economy as well as the

lives of unorganized dairy farmers. Since this cooperative movement started, famous brands were formed in every corner of India. Some of the well-known Indian brands are listed in the Table 1.

INDIAN BOVINE POPULATION AND MILK PRODUCTION

India is the world's largest producer and consumer of milk and it is a common knowledge that we have large genetic diversity in our bovines as is reflected by a large number of breeds and strains within them. We have the world's best breeds of buffaloes and cattle.

India's Dairy Breeds

Buffalo

The river water buffalo, common to India is well adapted to heat and humidity and, unlike other ruminants, thrives on a diet of green and dry fodders. Most water buffalo in India are categorized below:

Table 2: Important Buffalo in India [8–12].

Buffalo Breed	Native Place	Lactation Yield (kg)	Fat (%)
Bhadawari	Uttar Pradesh	800–1,200	6–12.5
Murrah	Punjab and Haryana	1,500–2,500	7.8
Pandharpuri	Maharashtra	1,500	7.0
Mehsana	Gujarat	1,200–1,500	7.2

Indigenous Cattle

India has a large number of indigenous cattle breeds, including breeds favored for milk production, those favored for draught purposes, and multiple-purpose breeds. As with buffalo, most indigenous cattle are of mixed,

nondescript breeds, but the most productive dairy breeds include (Table 3):

Table 3: Important Indigenous Cattle [8, 10, 11].

Cattle Breed	Native Place	Lactation Yield (kg)	Fat (%)
Sahiwal	Punjab, Rajasthan	1,400–2,500	4.9
Red Sindhi	Odisha, Tamil Nadu, Kerala	1,250–1,800	4.5
Tharparkar	Rajasthan, Gujarat	1,800–2,600	5.0
Gir	Gujarat	1200–1,800	4.4

Crossbred Cattle

Programs to cross imported exotic dairy animals with domestic breeds through artificial insemination (AI) began in the late 1960s. Imported pure exotic breeds do not adapt well to India's climate and disease conditions, but crossing with indigenous breeds can result in a beneficial combination of improved yields, along with adaptation to climate and disease conditions. India produces about 54 million doses of buffalo and cow semen annually, and there are 84,000 AI centers carrying out about 50 million inseminations annually [11].

Table 4: Important Crossbred Cattle [8, 10, 11].

Crossbred Cattle	Cross	Lactation Yield (kg)	Fat (%)
Karan Swiss	American Brown Swiss with Sahiwal or Red Sindhi	3,257	4.2–4.4
Karan Fries	Holstein-Friesian with Tharparkar	3,700	3.8–4.0
Frieswal	Friesian (5/8) with Sahiwal (3/8)	2,630–2,730	3.5–4.5

CURRENT STATUS OF DAIRY INDUSTRY IN INDIA AND WORLD

World's Milk Production -2011-2013 (Average)			
Country	Cow	Buffalo	Total
Million tons			
India	59.4	67.7	127.1
United States	90.4	0.0	90.4
China	36.8	3.1	39.9
Brazil	32.9	0.0	32.9
Russian Fed.	31.1	0.0	31.1
Germany	30.7	0.0	30.7
Pakistan	13.4	16.3	29.7
France	24.0	0.0	24.0
New Zealand	18.5	0.0	18.5
Turkey	15.5	0.0	15.6

Fig. 1: World's Milk Production (2011–2013) [9,12].

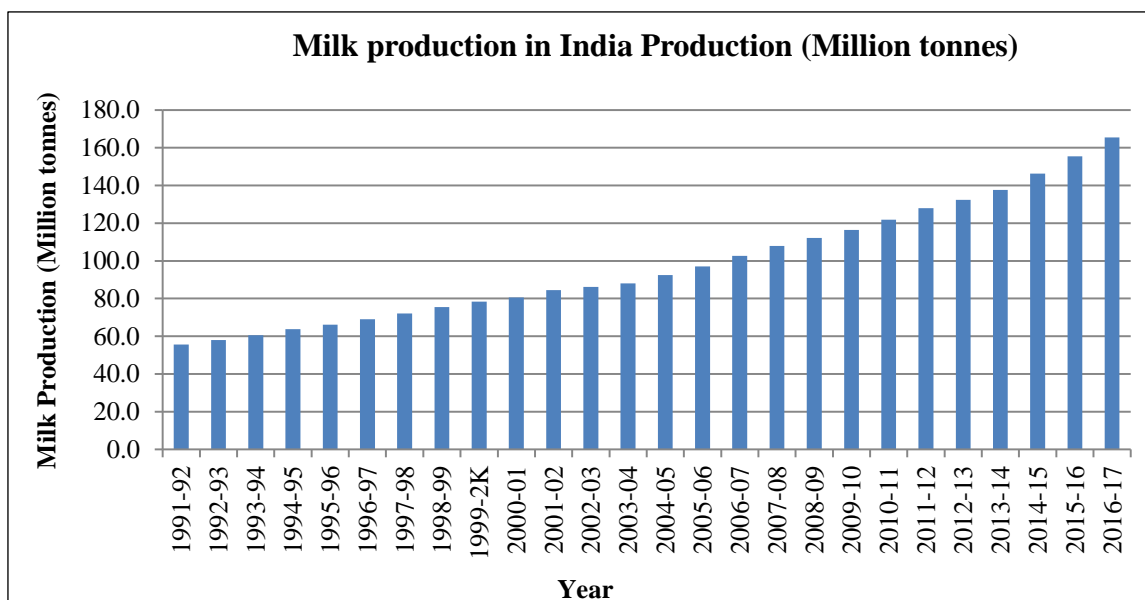


Fig. 2: Milk Production in India Production (Million tonnes) [13].

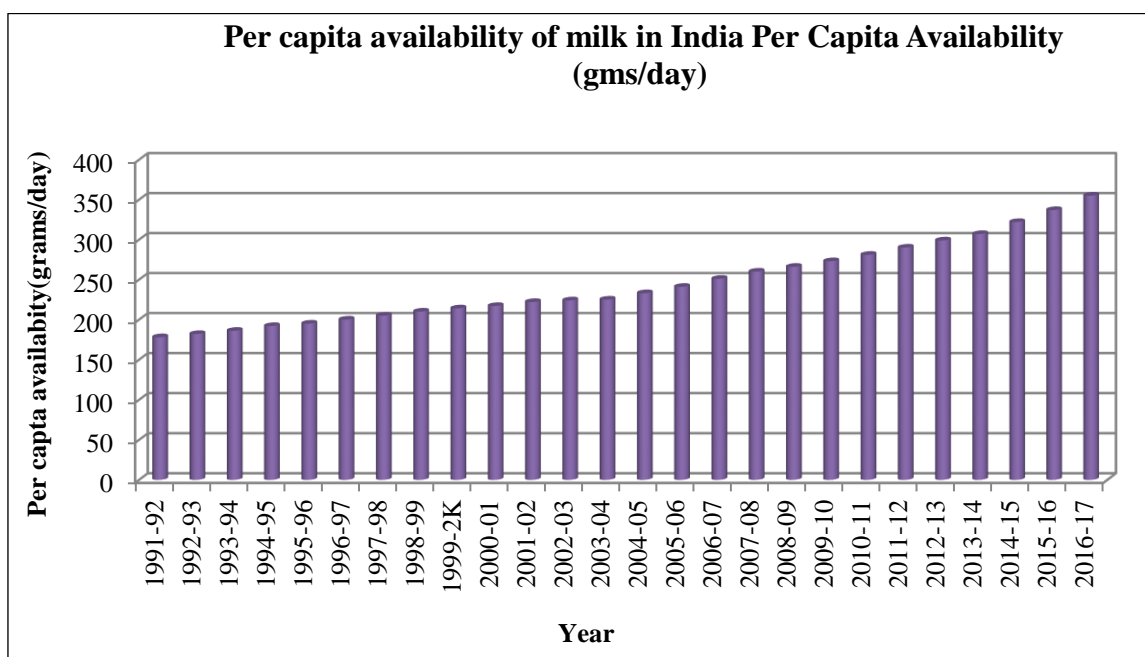


Fig. 3: Per Capita Availability of Milk in India Per Capita Availability (gm/day) [13].

CHALLENGES OF THE DAIRY INDUSTRY

Dairying is important for India because it is a rural based, land saving industry. The unique characteristic of Indian dairy industry is that the bulk of milk production in our country is handled by small milk producers who are illiterate and ignorant of economic aspects of milk production. While India is one of the largest milk producers in the world, many researchers like Bhalla discussed the challenges of the dairy industry in terms of quality which

includes Quality Management Systems (QMS), Total Quality Management (TQM); these terms are simply about quality the dairy/food products. Quality is important index to measure the acceptance of product and the brand [14].

Deshmukh mentioned about the basic issues of dairy sector like unorganized milk-animal holders; inadequate and inappropriate animal feeding and health care; low productivity; an inadequate basic infrastructure for provision of production inputs and services; lack of an

assured year-round remunerative producer price for milk; an inadequate basic infrastructure for procurement, transportation, processing and marketing of milk; and lack of professional management [15].

CONCLUSION

The 'White Revolution' in India was brought by the launch of "Operation Flood" (1975) which attained the world's surprise position in milk production. Amul played a significant role in the starting era of Indian dairy sector. Rise of "Amul" as a prime dairy brand of India emphasized the growth of cooperative dairies, throughout India. Prominent livestock strength of India and power of cooperative movements have amplified the fast growth of Indian dairy industry.

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