CHAPTER : 2

Growth & Development of Milk Dairies in India In general and Gujarat in particular
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CHAPTER : 2

GROWTH AND DEVELOPMENT OF MILK DAIRIES IN INDIA IN GENERAL AND GUJARAT IN PARTICULAR.

History of growth and development of dairy industry in India can be divided into two broad categories for the sake of our study:

2.1 PRE-INDEPENDENCE PERIOD DATING BACK FROM 1889 TO 1947

&

2.2 POST-INDEPENDENCE PERIOD COMMENCING FROM 1950 TO TILL TODAY.

2.1 PRE-INDEPENDENCE PERIOD:

The Indian culture is basically self-sufficient and contended. In the past, every family domesticated cows to fulfill their requirement but dairy was not developed as a profession. With the advent of the nineteenth century, the condition was getting changed and, in real term, the people of India adopted dairy industry as a business.

During the British rule, in order to fulfill the requirement of the dairy, the cattle breeding centers were established. In 1891, first centre of cattle breeding was started at Allahabad. Later on, at Bangalore, Poona, Karnal and Hissar, such type of breeding centres were established in 1923, expert services of Imperial Dairy were started by the British Government. In 1941, the cattle breeding centre of Bangalore was converted into Imperial Dairy Research Institute.1 After the first World War, such type of cattle breeding centres were handed over to Central Government and later on, such type of centres were put under concerned State Governments. In these centres, cattle breeding was done on scientific basis and item like pancer was also started to be made. Thus, in India, the dairy development was ushered in.

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In the private sector, following units have been certified to start Dairy Industry in a modern way:

a) Polson Dairy, Anand
b) Ceverter Dairy, Aligarh
c) Lords Dairy, Ahmedabad.

During the first World War, Polson Dairy started to make butter with the help of hand made wooden butter churner to cater to the needs of army. In 1929, 5000 pounds of butter making mechanical machine was installed. So the industrialization of dairy Industry was started in India. But real progress has been made only after independence.

So far, as the dairy co-operatives are concerned there were only some isolated efforts towards forming co-operatives made in 1930s and 1940s. The earliest dairy co-operative was found in Allahabad in 1913. Co-operatives also came up in Crode District of TamilNadu, in Surat District of Gujarat and in several areas of Maharashtra. But due to inadequate organization and management, it could not achieve the desired progress. The involvement of the vested interest of private traders in co-operatives resulted into exploitation of milk producers.

Since 1946, with the establishment of Amul dairy in Anand, the co-operative activities have been started in India with a better impact. In the beginning, Amul was collecting 250 litres milk per day for Mumbai and today milk procurement of Amul is 12,00,000 liters per day. What a giant leap indeed! It is one of the biggest dairies of Asia which has brought about a tremendous revolution and has been rendering its excellent services all over India and also in the World. Amul is providing milk and milk products to the people of Kheda District as per their requirements. It also provides butter, Ghee, Paneer, Milk Powder etc. all over India.

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After the Amul, the revolution continued. In 1950, Polson has established a butter factory in Khagol near Patna and, with this, so many private firms like Nestle in Moga, Glaxo in Aligarh, Horlicks in Nabha, Hindustan Lever in Atta etc. were started. Thus, the industrialization which started in 1929, has been expanding.

2.2 POST INDEPENDENCE PERIOD:

After independence, the Indian Government and concerned State Governments have given top priority to the below mentioned four fundamental aspects of the development of Dairy Industry:

a) Development of District Co-operative Society.

b) Establishment of Milk Colonies in urban areas.

c) Establishment of dairy Farms to enhance milk production.

d) Establishment of factories for producing bye-products on a large scale.

Due to co-operative activities, the economy of villages improved. New arrangement started for milk procurement and distribution. The cattle rehabilitation scheme was put into operation to abolish slums in the urban areas. Thus, the first milk colony was established in Aarey (In Mumbai) in 1949. Thereafter dairy Farms Milk Colonies were established in Calcutta and Chennai. Calcutta’s Milk Colony was near Haringatia and the Milk Colony in Madras (new Chennai) was at Madhuvaram. Their dairy farms were equipped with artificial insemination and veterinary health cover & housed a large number of cattle, mainly buffaloes. Their owners fed, milked and reared animals in the shed provided to them and sold milk at pre-determined price to the milk colonies. The colonies, in their turn, owned large processing plants. These edifices were thus a legacy of the colonial dairy policy to improve cattle breed; every State had started cattle breeding centres. Factories were started to make milk products where the milk produced in bulk. Cottage creameries were started in village-areas and dairies were established

in many places. With the establishment of National Dairy Development Board (N.D.D.B.) in 1965 and Gujarat Dairy Development Corporation (G.D.C.C.) in 1970, the development of dairy industry got surprising momentum particularly in the co-operative sector. Afterwards, N.D.D.B. has drawn up a ambitious project named Operation Flood (O.F.) that means to create a flood of milk in every part of the country. It gave a greater impact to modernized dairy industry. The co-operative movement which is popularly known as ‘Anand-Pattern’ has become an ideal in the entire World.

To cope with the regional and seasonal imbalances in milk procurement and marketing, the National Milk Grid (N.M.G.) has been setup by N.D.D.B. under O.F.II (sometime between 1981 to 1985) to move liquid milk from surplus rural area to deficit urban regions. The N.M.G. ensures year round stable milk supply to consumers at a reasonable price and a remunerative price to producers.

To fulfil the above four broad fundamental aspects of dairy development, the vital organs absolutely required are breeding, feeding, health care, training, education, research etc. Keeping this in view, Government has initiated many schemes, programmes and institutions for the betterment of dairy Industry.

**Breeding:**

Though India possesses highest number of livestock (19% of world’s bovine population and 51% of Asia’s cattle population), the average milk yield is poor compared to world’s average i.e. 2038 k.g. per lactation whereas in India, it is 987 K.g. per lactation.¹ This low productivity is due to gradual breed deterioration from general neglect over centuries.

To enhance milk product, the adoption of scientific method, viz., artificial insemination (AI), cross breeding and embryo transfer (ET) have been in operation for pretty longtime. By adopting these

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methods, milk yield has indeed increased at least 10 to 25 per cent approximately. However, the fact is that, even though India possesses the largest number of cattle population, the multiplication of quality breed is not up to the desired level - in spite of adoption of AI and cross breeding for the last 30 to 40 years, as it covers only 10 to 15 per cent of cattle population. Under these circumstances, E.T. technology comes into picture. E.T is an improvement over A.I. It creates better seed stock whose impact on the general population could be further propagated A.I.?

To take the full advantage of the above three systems, following Institutions have been established at Government level as well as co-operative sector:

a) One thousand gaushalas: for scientific cattle breeding.

b) Central Council of Gosamvarthan (C.C.G.) to encourage gaushalas to produce high quality indigenous / crossbred heifers.

c) Seven Central Breeding Farms: to provide superior male germplasm of important indigenous breeds in different agro climate.

d) National Bureau of Animal Genetic Resources at Karnal in Haryana in 1984. to develop data bank for indigenous breeds of cattle and other livestock and a genebank for all the rare endangered spices. It is recognized by FAO as a Regional Data Bank on Animal Genetic Resources.

Currently, India has a large network of 30,000 centres both in co-operative and Government sectors, carrying out about 15 million Artificial Insemination per year.

Recently, crossbred cow is emerging as an important dairy animal. Its milk yield surpasses that of the buffalo. The most touching advantage or crossbred cow is that it maintains its milk in summer when the buffalo milk output drops as much as 50%. The first systematic and extensive crossbreeding project was initiated in 1963.

in Kerala under bilateral Indo-Swiss project. The project coupled with the efforts of the State Animal Husbandry Department and the co-operative network, has resulted in the population of crossbred cows exceeding that of desi cows. The total population was estimated to be about 10 million in 1990.

The N.D.D.B. has initiated a pilot project in 1986. Its encouraging results led to the launching in 1987 of a multi-agency Science & Technology project on ET in cattle and Buffaloes implemented by the Department of Biotechnology, ministry of Science & Technology, jointly with the Ministry of Agriculture & Indian Council of Agriculture. Presently, some 14 State-centres, three Regional Centres, one Apex co-ordinating centre i.e. N.D.D.B. one main ET laboratory and three major lab centres are working.6

**Feeding:**

Chronic shortages of food and fodder coupled with poor nutritive value of available feeds have lowered the productive capacity and fertility of India’s livestock. As much as 15 per cent increase can be recorded in the existing milk product through adequate feeding of the present bovine population.7 Feed is also the largest input as it accounts for over half of its total cost; proper attention to feed can help bring down this cost.

For the efficient and judicious use of existing resources, newer technology is being developed to upgrade crop residues in addition to balanced cattle feed, which includes following:

a) **The Enrichment Of Straws Through Ammonia Treatment:**

Treatment of straw by urea can gently increase its nutritive value, digestibility, palatability and intake. It reduces the cost of production considerably and thereby maximizes returns to farmers.

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b) **The Bye-Pass protein Feed**:
The N.D.D.B. has developed this technology. It increases the protein conversion efficiency of the cattle feed by 33 per cent and dry matter conversion by 30 per cent and minimizes dry matter requirement for milk production by 24 per cent. As a result unit cost of milk production can be cut as much as 25 per cent.

c) **Urea Molasses Mineral Block**:
It is developed by the ICAR. institute, Agricultural Universities and N.D.D.B. Milk yield has increased to the extent of 20 % by this newer technology.

d) **U.M.M.B. Lick**:
N.D.D.B. has also developed U.M.M.B. lick which allows the slow ingestion of urea which in turn is efficiently utilized by the rumen microbes. It supplies most of the nutrients generally deficient in a straw based diet. It was found that (by the use of UMMB licks) concentraterequirement has reduced by40 percent and daily income increased significantly.

**Production Capacity Of Private & Co-operative Sector**:
Today India has an organized feed compounding industry. In the past 30 years, the annual production of compounded feed has gone upto about 3 million tones from 40,000 tones by organized sector. In the co-operative sector, at present balanced feed compounding capacity is of 4905 tones per day. In addition to it, the bye-pass protein technology in 17 cattle feed plant, 8 U.M.B. (Urea Molasses Block) plant with the total capacity of 72 tonnes per day and 10 plants of U.M.M.B. licks have been established.
To enhance the productivity of fodder, a new scheme named Silvipasture was developed in 18650 hectares of land.

**Health Care**:
The key to profitable dairy farming is the prompt detection and accurate diagnosis and their early treatment. Negligence in management of dairy animals pre-disposes them to certain diseases
which can cause heavy economic losses. Conversely, effective disease prevention and control measures can enhance milk production by 20 per cent.  

In order to provide better health cover for livestock, a network of 19791 veterinary hospitals dispensaries and other 20302 veterinary aid centres have been established by the State department of Animal Husbandry and located within 5 kms. distance of village, all over the country. They are manned by qualified veterinarians and stockmen. To meet the demand of biological product for control over livestock diseases, 26 biological centers (19 in Public and remaining in private) have been established. Due to concerted efforts by the government, the rinder pest (RP) disease has been almost eradicated. To save livestock against the exotic diseases, Anima Quarantine and certification services have been introduced. A vaccine against Hemorrhagic Septicemia (HS) in 1954 and recently a vaccine against theileria have been developed to reduce losses due to these diseases.

To satisfy the growing demand of veterinary pharmaceuticals and biologicals, some 150 companies are engaged in the production with the annual turnover of Rs.400 crores with the growth rate of 15%.

Looking at the importance of health care, the government of India has allocated Rs.582.00 Crores in the ninth plan to achieve two fold aim, Viz., 1) to reduce economic loss by eradicating diseases and, 2) to enlarge export of livestock products as per standard set by World Trade Organization. (WTO).

**Education, Research & Training:**

The success of dairy industry depends upon the human resources possessing knowledge, skill, work-culture and adequate capacities to perform at various levels in the dairy industry. The educational Institutes are, therefore, required to train the professionals equipped
with the above competencies and skills.

The rate of growth of dairy Educational Institutions has been commensurate with the development of dairy Industry. The educational network comprises 10 dairy science colleges, 31 veterinary colleges and over 80 agricultural colleges and research institutions, affiliated to 27 State Agricultural Universities. Four of the existing dairy science colleges are to be upgraded to the status of regional college to serve as centres for excellence. In addition, over half dozen research institutions under the Indian Council of Agricultural Research (ICRA) in the field of animal sciences which, among the others work on animal health, dairy production and processing, buffalo-animal genetic resources evaluation and conservation.

These institutions provide facilities for certificate Diploma Degree, Masters and Doctoral level education in animal science and dairy science, with specialization in production, health and processing technology.

To upgrade the technology required for dairy development, a new scheme or programme called Technology Mission on Dairy Development (T.M.D.D.) was launched by the Government of India in 1989.

As far as co-operative sector is concerned, to meet the wide ranging and urgent man power requirement for the rapidly growing dairy industry, the N.D.D.B. has set up the Institute of Rural Management at Anand in 1979, for training in Management and Consultancy in rural development. Earlier, in 1971, N.D.D.B. established the Mansingh Institute for training at Mehsana in Gujarat for middle level manpower, needed for dairy production and processing. Encouraged by its success, the N.D.D.B. has set up three other Regional Demonstration & Training Centres (R.D & T.C.) at Erode, Jalandhar and Siliguri to cover the southern, northern, and eastern regions respectively.
Moreover, to impart in-plant training to students, a Vidya dairy was established at Anand by N.D.D.B. under the operation Flood Programme.

**Recent Situation:**

Government of India has recognized the importance and contribution of livestock to the national economy and set up a new separate department of Animal Husbandry in Dairying in the Ministry of Agriculture in 1990 at central level.

In 1991, as part of the economy reforms, the dairy sector was delicensed in an effort to push it towards faster modernization and greater competitiveness. Subsequent to these steps, the milk and milk products production sector have been flourishing. At present, the dairy industry is developing at the rate of 12 to 15 percent. It can be gauged to keep in view that 80 percent of the total milk production is coming from unorganized sector. So the dairy industry development has got tremendous opportunity which can be seen from the below listed points.

a) **Top Dairying Nation:**

India is all set to be the World’s top milk producer in 1998 with its output projected at 78 million tones, but the per capita availability even then would be woefully low at 220 grams per day. As per medical science criteria, it should be 400 to 500 gram’s per day. So there is wide scope for domestic market.

b) **Income Elasticity of Demand for Milk:**

With the rise of income, the per capita milk consumption is likely to increase as there is a deep root belief in the mind of people that the milk is nourishing food or the nutrient food par excellence. Thus, people’s extensive liking for milk and milk products will boost the milk consumption.

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c) **Number One Commodity :-**

Milk is India's number one farm commodity in terms of its contribution to the total agricultural production i.e. 17 percent. In 1994, the value of its output based on producer price was Rs. 50,051 crores.

**d) Opportunity In Allied Activities :**

The total of the activities connected with the transportation, cattle feed and health care, works out to be Rs. 30,000 crores which will create more opportunity for employment.  

It is expected that between 1996 to 2000, the milk sold in packed form will achieve 176% rise because out of 3700 cities, only 778 cities can get milk in pouch packed form. So the demand for various packaging form will spiral.

**e) Export Potentiality :**

With the removal of subsidy under GATT (General Agreement on Tariff and Trade) agreement, India's low cost milk will become price competitive in world Dairy trade. Another plus point is its geographical location surrounded by milk deficit countries in Asia. However, the Indian dairy industry will have to focus on quality product development and marketing.

The Government of India has enacted below listed laws and regulations to ensure quality control:

a) Prevention of Food Adulteration Act (P.F.A.) 1954
b) Export (Quality Control and Inspection) Act, 1963
c) Standards on Weights and Measures Rules, 1977
d) Milk and milk Products Order 1992 (M.M.P.O)

There are two voluntary organizations that deal with voluntary standardization and certification system in the food sector, Viz.,

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13. 'India Emerges as Top Dairying Nation' cited in Economic Times 1st July, 1996.
a) Bureau of Indian Standards (BIS) has standards for processed food, popularly known as ISI mark, and

b) Directorate of Marketing and Inspection (DMI) gives standardization to raw agricultural product which is known as Agmark.

In addition to these, the Government of India has made it mandatory to obtain I.S.O.9000 for exporting milk and milk products.\textsuperscript{14}

Another important thing is product innovation. Indian companies lack it severely. National Dairy Development Board (N.D.D.B.) and National Dairy Research Institutes (N.D.R.I.) have succeeded in developing, upgrading and modernizing processes for variety of milk products. It is also necessary for energy saving and pollution control. The value added products will give competitive strength against multinationals.\textsuperscript{15}

As far as marketing is concerned, brand promotion and sound distribution network is badly needed. Co-operative has done well through the National Milk Grid Scheme. To capture domestic market, marketing concept of three A's, Viz., availability, acceptability, and affordability should be taken into consideration. Indian dairying is already endowed with first two. It lacks the third vital concept i.e. affordability.\textsuperscript{16} To make milk affordable for the large majority with limited purchasing power, milk should be packed in small quantities of 250 ml. or smaller than that.

On export front, following suggestions may be useful:

a) Research and development to predict demand and supply trends prevailing in the importing countries.

b) Participation in World Trade Fairs, various dairy conferences and presentation of technical papers.

\textsuperscript{14} 'Regulations in Dairy Industry' by Asim K. Banerjee, cited in Dairy India-1997, Edited by P.R. Gupta, Publications of Government of India, New Delhi, p.208


\textsuperscript{16} 'World Focus on Indian Dairying' cited in Dairy India-1997, Edited by P. R. Gupta, Publications of Government of India, New Delhi, p.7
c) Advertisement in leading print medias and electronic medias.\textsuperscript{17}

To achieve the above objectives i.e. quality control, product development and marketing, the N.D.D.B. has also played a vital role through O.F. programme.

Presently, Co-operative infrastructure comprises 23 State Federation, 170 district unions and around 90,000 village co-operative societies through which rural milk production has been effectively linked up to urban market and consumption centres.

The highlights of the Operation Flood (O.F.) programme are as follows:

1. Average milk procurement 102 lakh k.g. per day (Target : (1987-96) 120 lakh k.g. per day).
2. Peak procurement 116 lakh k.g. per day (Target : 200 lakh k.g. per day.)
3. Milk drying capacity 842 tonnes per day. (Target : 1100 tonnes per day).
4. Milk processing capacity 172 lakh litres per day (Target : 211 lakh litres per day).
5. Cattle feed plant capacity 4905 tonnes per day (Target : 3805 tonnes per day)
6. D.C.S. under A.I. 16287 (Target : 17000)
7. Liquid milk marketing 94 lakh litres per day (Target : 104 lakh litres per day)
8. Farmers members 9 million. (Target : 8 million)
9. Farmer owned co-operative societies 90,000.\textsuperscript{18}

As per the above stated highlights, most of the targets seem to be nearing attainment. However, with the entry of private and multi-national, a challenge has been thrown for the co-operative sector because it has got limited resources in comparison with private and

\textsuperscript{17} 'From Nobody to Somebody' by A. K. Choudhery, cited in Dairy India 1997, Publication of Government of India, New Delhi, p.97.

\textsuperscript{18} Financial Express (Ahmedabad), 30th September, 1996. p.7.
multinationals. However, immense potential exists for all the three major players, Viz., Public sector, Private sector, and Co-operative sector, to develop the dairy industry within the country as also outside the country. If all the three players agree, there is no reason why India cannot beat the U.S.A. to become the largest milk producing country and a major player in the international dairy products arena.  

The details of dairy development in India is given statewise as well as whole showing in a map. Which has been given afterwards.

19. 'Dairying may emerge as major forex earner' cited in Economic Times, 25th June, 1996.
DAIRY MAP OF INDIA

After stagnating around 20 million tonnes in the 'fifties and 'sixties, India's annual milk production crossed the 30-million-tonne mark in 1980 and the 50-million mark in 1990. It is now set to peak at 86 million tonnes by 2050 AD when India would rank as the world's number one milk producer. The credit for this phenomenal increase in milk production goes to millions of small dairy farmers, spread over 500,000 villages, who have been energized through cooperatives and other institutions – a modern miracle in its own right!

SELECTED INDICATORS OF DAIRY DEVELOPMENT, 1997

- Milk Production: 74.3 million tonnes
- Per Capita Milk Availability: 214 g/day
- Annual Rate of Growth: 5.6% (1986-2000)
- Human Population: 965 million
- Total Milk Herd (1997): 9.8 million
- Indigenous Cows: 56.39 million
- Crossbred Cows: 4.54 million
- Buffaloes: 38.67 million
- Value of output: Rs 1,050,000 million

Operation Flood, 1970-85
- Milkshed (No): 170
- Dairy Coop Societies (No): 69,600
- Farmer-Members: 9 million
- Milk Procurement (Av): 10.3 million kg/day
- Milk Marketing: 9.9 million lpsd
GROWTH AND DEVELOPMENT OF DAIRY CO-OPERATIVES IN GUJARAT IN PARTICULAR:

The Co-operative movement in Gujarat is similar to that of India in the matter of Dairy farming. The peculiarities of co-operative trends in India and in Gujarat are identical to each other. Amulis the pioneer of the Dairy co-operatives in Gujarat and in turn in India.

Before the advent of Amul dairy, there was no organized marketing for milk in India. As milk is perishable item, farmers were compelled to sell it to middlemen for whatever they were offered and middlemen, in turn, sold it to cities with huge profit. Often they had to sell cream and ghee at throw away prices. Thus, they were exploited by the middlemen.  

Even though many farmers were illiterate, they realized that the system under which private traders bought their product at low prices and sold with huge amount of profits was just not fair. This became more noticeable when the Government of Bombay started the Bombay milk Scheme in 1945. The firm called ‘Polson’, a privately owned company, had got monopoly to collect milk from Kheda district to be sold at Bombay and exploited the farmers.

The arrangement was highly satisfactory to all concerned parties except the farmers. The Government of Bombay found it profitable while Polson kept good margin and private traders took the biggest share of profits. But no one had taken the trouble to fix the price of milk to the benefits of the milk farmers. Assuch discontent among the milk farmers grew. Hence they decided to have their own milk co-operatives to protect their own interests. They decided to supply milk as an organization and not as an individual. The main inspiration for this came from Sardar Vallabhbhai Patel, son of the soil of Gujarat. It is the pride not only of Gujarat but of entire nation. In nurturing the Amul, the role of leaders like Morarji Desai, Tribhuvandas Patel, dedicated professionals like Dr. V. Kurien and

Dr. Dalaya, is praise worthy. The Bombay Government opposed the co-operative movement in the milk sector. Hence the milk producers of Kheda district went on strike for 15 days. Consequently, not even a drop of milk was sold to private traders nor did the milk from Anand reach Bombay which resulted into collapse of the scheme. Seeing the firm determination of the farmers, the Bombay Government had to concede to the demand for foundation of milk co-operatives.

Consequently, the Kaira District Co-operative Milk Producers Union Ltd., popularly known as ‘Amul’ was started in 1946. Initially, about 250 litres of milk per day was collected through two co-operatives of the union. For the first time, the farmers were getting attractive remuneration on the basis of fat content of the milk. The fat testing was carried out twice in a day. As they were paid promptly, they had cash in their hand. More and more farmers and thus the union gained much strength. Today, it is collecting a million litres of milk per day from 962 Co-op. Societies. The vision, wisdom, courage, and integrity of late Tribhuvandas Patel and Dr. V. Kurien have given the name of AMUL as excellence in Asia. The village milk producers supported and co-operated nicely with the efforts of these leaders and understood the spirit of co-operation in right sense.

Hitherto the union (Amul) collected the milk from its members and supplied it to milk commission of Bombay but the milk commission adopted delayed technique by delaying payment to the union and refusing to accept the excess milk in winter season. This proved a blessing in disguise. The union started its own processing plant to handle winter glut of milk. Thus, the production of butter and milk powder was started in 1955. In 1958, milk producer’s factory was further expanded to manufacture sweetened condensed milk. It renovated an idle chilling centre at Anand in 1949. In 1960, a new plant was installed for manufacture of roller dry baby food and cheese.

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It was for the first time in the world that cheese and baby food were being processed from buffalo milk on large commercial scale. It was commissioned in 1964. In 1965, another milk powder plant was commissioned to meet with the requirement of defence service. In 1974, Amul dairy set up a plant for high protein weaning food, chocolate, malted food at Mogar, on National Highway No.8.

The Kaira union has always believed that the responsibility to collect marketable surplus of milk should be linked with the provision of making the production enhancement inputs. It has full fledged machinery to provide breeding, feeding and health care facilities. Efforts were also made and are going on in the area of waste heat recovery and energy conservation.

The success story of Kaira district co-operative milk producers union Ltd. had reached every nook and corner of the country. The then Prime Minister Shree Lal Bahadur Shahstri visited Anand in 1964 to declare open the cattle feed plant of the union. He was wonder struck by the fantastic success of the co-operative movement in Anand and surrounding area.

He desired that milk co-operative on this pattern should be established in the other parts of the country also. With this objective in mind, the N.D.D.B. was established in 1965 with its headquarter at Anand. The operation flood programme was launched by NDDB in 1970 which sought to replicate the AMUL pattern dairy co-operative throughout India. This programme is considered to be the World’s largest and successful dairy development programme. Today, 80,000 co-operative societies and 170 district unions have been functioning in India on AMUL pattern while, in Gujarat, dairy co-operatives on Anand pattern have been functioning in 18 out of 19 districts under the O.F. programme of

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N.D.D.B. The dairy co-operative structure has two tiers: (i) village society, and (ii) the union which is functioning at the district level. The village society is mainly concerned with the production and collection of milk besides acting as a channel to market the production-enhancement-project. The union is responsible for processing and marketing of milk. It has also the responsibility for providing technical input services to village co-operatives to enhance milk production.

In nut-shell, it is to be noted that this co-operative (Amul) which is perhaps the largest milk co-operative in the whole developing world, has worked as a nucleus to boost up not only the rural economy but also greatly to enhance the social, educational, and cultural aspects of life in rural area. 22

Though in Gujarat most of the districts have developed dairy industry on co-operative base but some parts of the state remained under-developed. In that respect, the Government of Gujarat has established G.D.D.C. on 29-3-72. 23

As other similar institutions grew in the State, marketing became inter competitive and difficult. As a result, an Apex co-operative institution - the G.C. M.M.F. was formed with prime responsibility of marketing the products manufactured by its member dairies under the brand name of 'Amul' which means invaluable. This has resulted into reduction in cost of marketing and distribution and better services to consumers due to professional managers of the Federation.

At present, organized dairies in co-operative sector are functioning in 18 out of 19 districts of Gujarat. About 19.50 lakh farmers are members of 11430 D.C.S. working at village level. The average milk procurement comes to about 31.57 lakh lpd whereas 14.31 lakh lpd is being marketed. About Rs.2.5 crores were earned every

day through selling of milk and about 40,000 persons get regular employment through dairy based activities.

The handling capacity is about 60 lakhs liters per day (which is 40% higher than the average procurement) which is enough to handle winter glut. Besides, the dairy plant, 36 chilling centers with 18.55 lakh lpd capacity are located at various places. There also exists facility for making 233 mt.milk powder per day. 24

Thus, four hands (Viz., milk producers, milk processors, milk distributors, and milk consumers) are joined together through milk co-operatives in Gujarat State so as to ensure prosperity all over in the milk industry of the State.

CHALLENGES AGAINST THE CO-OPERATIVE DAIRY INDUSTRY IN GUJARAT:

India is highest milk producing country in the World and milk and milk products constitute 17 per cent of total agricultural products. The dairy industry is developing at the rate of 12 to 15 per cent per year. It is beyond doubt that credit of development of Indian dairy industry goes to co-operative societies. In spite of that, dairy industry, in general and in Gujarat in particular, faces many challenges and problems which are as follows:

(i) External problems
(ii) Internal problems.

External problems can further be divided into three subsets:

(a) De-licensing
(b) Increasing competition
(c) Rejection of Member’s Right. 25

Due to delicensing and globalisation, the co-operative dairy industry has to face cut throat competition with traditional milk traders and

multi-national companies. In private sector, profit is sole motive of the business. Here man and their human values or welfare of the society take back seat which some times lead to exploitation of the producers and consumers in the matter of quality of products and in terms of money.

(ii) **Internal Problems**:

a) Procurement of milk is dwindling year to year.

b) Participation of members in co-operative societies is reducing.

c) Deficit finance of milk union is increasing.

d) No serious attempt is made to improve the financial soundness of the co-operative society.

1. The target set in the third phase of the operation flood has not been met as is evident As evident from the average milk procurement of 102 lakh kilograms per day as against the target of 145 lakh Kg. per day.

2. Active participation of the members in day to day affairs of management of the societies is reducing. Members are interested only in selling their products (milk) and getting their remuneration. They neglect other aspects of the co-operation. They do not consider co-operation as a way of life.

3. Due to heavy manufacturing expenses and administrative costs, the dairies are not able to earn sufficient surplus or profit resulting in deficit in their budget.

4. No scientific methods or techniques are adopted to reduce ever increasing cost.

Sufficient profit is the only panacea of all these evils faced by the co-operative dairy industry at present. In other words, dairy industry should strive to enhance profit so that it can survive the onslaught of M.N.C.