Chapter V

Dairy Industry

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5.1 Introduction

Emergence of Dairy Industry

India is often described as a land of contrasts. Nowhere in this vast land of 970 million people is this more true than in dairy farming. The pressure of population ensures that the land remains the property of millions of farmers who own plots which are tiny by world standards. There is, in addition, a sizeable population of labourers who work on the land but who do not own any. The size of the population also makes it necessary that the land is used to grow food crops for the growing needs of the people, not merely because their numbers continue to grow but because their economic condition is improving and they can afford better and more food.

This clearly means that very little land can be diverted to the growing of fodder for cattle. Cattle therefore have to make do with the residues left over after food crops have been grown namely, straw, rice polish, bran and de-oiled groundnut (peanut) cake and cereal concentrate. Not for the Indian cow or buffalo those acres of green carpet that is the privilege of cattle in New Zealand, Europe and elsewhere. Each dairy animal therefore typically produces no more than three or four litres of milk a day. But since the cattle is fed only crop residues, the levels of energy efficiencies achieved would be impossible in a developed world dairy setting.

According to Food Outlook 1997 produced by the Food and Agricultural Organisation of the United Nations, India is the largest producer of milk in the world along with the United States at the end of 1997 with a total production of 70.8 million tonnes. It is expected to overtake the US and go on to produce 74 million tonnes in 1998. How has this been accomplished?

The dairy industry in India suffered from all possible disadvantages, save one, when India became independent in 1947. India, almost alone among non-European cultures, is a milk drinking nation. This, coupled with a large population, ensured a constant and growing demand for milk. But the economic policies then being followed had ensured that the production of milk languished at less than 20 million tonnes and was falling. The best cattle was taken to the cities to meet the demand for milk and when they went dry they were either slaughtered or abandoned. This was responsible for eroding alarmingly the genetic potential of dairy cattle in the country.
Farmers in the villages, involved in dairying as an occupation, were compelled to sell milk to middle men at derisory prices because the government had given them the monopoly of purchasing the milk. Producing milk also involved high risk because it could not keep beyond three hours in India's tropical climate. The result was evident in the falling production of milk.

In this worsening scenario the farmers of one district, Kheda in Gujarat, decided to seek the advice and help of one of India's greatest men - Sardar Vallabhbhai Patel who later became Deputy Prime Minister of independent India. He suggested to them that the only way they could save themselves was to form a dairy cooperative and sell the milk directly to the markets instead of through the middlemen route. Forming a cooperative offered its own difficulties. Here was an illiterate farming community being told to form a modern cooperative and market their milk in one of India's most modern and sophisticated cities - Bombay. It also met with opposition from all quarters - from the British Indian government's Milk Commissioner in Bombay to the local privately owned dairy in Kheda, to the middlemen that it employed.

The cooperative struggled against all odds for years - and it survived, and eventually it thrived. By 1965 this cooperative calling itself AMUL (meaning priceless) but also an acronym for Anand Milk Union Limited, had acquired a name for itself as the best run and most modern dairy cooperative in the country. It provided fortified fodder for the cattle of its members and veterinary services on a 24 hour basis. It offered artificial insemination facilities using the best breeds to improve the dairy potential of the farmer's cattle and it bought all the milk that the farmer produced at fair prices all year round. It sold the pasteurised and treated milk in the big cities and it regularly distributed profits to its members over and above the good prices it paid each day twice a day to them.

In 1965 the Prime Minister of India, then on a visit to the district decided that the example of Amul could be replicated all over the country. This resulted in the setting up of the National Dairy Development Board which was given the primary task of replicating the Amul experience, in what came to be called the Anand Pattern of Dairy Cooperatives, all over India.

The plan, called Operation Flood, was to initially build four metropolitan dairies one for each of India's biggest cities and to develop twenty seven cooperative dairying
areas - termed milksheds - in ten states. The European Economic Community then played a pivotal role in ensuring that the Anand pattern replication plan went on to succeed. It donated milk powder and butter oil to India. This was reconstituted into liquid milk and sold in the metropolitan markets. The money, generated from the sale of the gift commodities, was then used to set up the four dairies. In the second phase help came from both the EC and the World Bank. This helped set up a national milk grid which ensured that major cities all over the country received their milk supplies by rail and road tankers from places often as far as 2000 kilometres away. The third phase expanded the effort made to embrace the entire country. Today there are 9.7 million farmers who are members of 75,000 village dairy cooperatives societies each of which is affiliated to 170 district level cooperatives which in turn are part of a federal cooperative marketing structure at the level of each state within the country. There are 22 state level federations which offer dairy and other products in competition in the open market among themselves and with the private dairy sector that runs side by side. The industry as a whole today produces enough milk and milk products to ensure that the country imports virtually no dairy products.

While the vast population makes for a per capita consumption of milk which is still rather low the fact that there are none of the severe shortages which were endemic only two decades ago, goes to suggest that the strategy followed by India to make itself self sufficient in dairy and dairy products has paid off handsomely. From a total production of 20 million tonnes in 1970 the production has gone up to more than 70 million tonnes in these last twenty five years or so. This means that even if the price of milk is calculated at just Rs 10,000 ($ 250) per tonne something like Rs 50,000 crores more ($125 billion) is today flowing back into the rural economy each year to directly benefit the poorest of India's farmers than it did in 1970. This clearly makes India's dairy effort one of the best attempts in economic development any where in the world, ever. It must also be remembered that it is one of the largest rural employment schemes in the world generating employment for some 18 million farmers spread over 22 states of the country. And most important of all, it is completely voluntary.

At the centre of the entire effort in dairy farming in India is the farmer, the owner member of his cooperative who takes every day decisions on the running of his society. He is a small farmer, or a labourer who works on someone else's land, and probably owns no more than one or two cows or buffaloes. He typically brings to the
cooperative perhaps just about four or five litres of milk each time. The cooperative elects its own Chairman and other officials who are bound to do what their members tell them. It also employs its own staff. This staff pays farmers on the basis of the quantity of the milk they bring in and on its quality tested on the basis of the fat content. The cooperative very often runs its own milk chillers, very important in a tropical country, and elects those who will represent it at the level of the district. At the district level they run their own milk processing plants many of which are huge even by world standards. The district level elected officials then go on to elect a state level managing committee for their federation. The federation in turn coordinates the entire marketing effort. The Gujarat Cooperative Milk Marketing Federation for instance is the largest food business in the whole of India, far larger than any of the multinationals operating in the field. All the state level federations have got together and formed a national federal structure called the National Cooperative Dairy Federation of India.

All this teaches India's farmers an everyday lesson in taking control of their own lives not just economically but politically as well. It teaches them to think and question because each of their actions, they now know, has an effect on their futures. They look forward to education, not just literacy. They now understand the meaning of democracy at an everyday level. In a country beset by age old tradition, religious and caste prejudices the democratic functioning of their cooperatives gives dignity to those who have had none for the whole of India's history spread over thousands of years.

Another aspect ignored, but just as important, has been the role of women. Agriculture involves the growing of one or two or at the most three crops a year. These fetch the farmer money as and when the crop is harvested and sold. But if he has just one or two cows or buffaloes they provide milk throughout the year. This milk once sold goes to keep the home fires burning. Since the number of animals in his home is so few, it is the woman of the house who looks after them. This gives her a level of economic independence she has never before had. In a largely male dominated society this has helped change cultural attitudes set over the centuries. Women now run their own village dairy cooperatives - more often than not, better and more efficiently than men. Most women do not harbour higher political ambitions and are content to run their cooperatives efficiently and well. This has ensured that the
dairy cooperative movement now has members who are steady and who will not abandon their farms for the glitter of the cities. Their literacy levels have shot up. Since female literacy and education has proved itself to be the best contraceptive ever devised by man, the fecundity levels of the population have been dropping steadily.

The dairy cooperatives of India have attracted the attention of other less developed countries as well. Sri Lanka, India's neighbor to the south, has gone into collaboration with the National Dairy Development Board of India to set up the Kiriya Milk Industries of Sri Lanka. The intention is to make Sri Lanka independent of milk imports in the next ten years. Kyrgyzstan, a former Soviet republic has had a dairy set up for it by the Dairy Board of India. Other countries which have expressed interest are Thailand, Vietnam, Iran and Pakistan.

As mentioned in the beginning India's dairy industry is a study in contrasts - the world's largest milk producer which gets its milk in driblets of three or four litres from each of its nine million farmers both men and women twice a day and ensures prosperity to them in one of the most successful economic and social development programmes ever devised by man.

In India, the dairy sector is important for various reasons. Among these its complementarity with agriculture for example and a capability to enrich the protein diet of the vegetarian population is well documented. A contribution, which is not well recognized, is its role in balancing the rural inequity. In recent decades the dairy sector has emerged as an important source of rural employment and income in the country. The growth of the dairy sector during the last three decades has also been impressive, at more than five percent per annum; although the country has emerged as the largest producer of milk only in the ‘90s.

This is not a small achievement when we consider the fact that dairying in India is largely a subsistence activity; farmers in general keep dairy animals in proportion to their free crop residues as also the available family labour with little or no purchased inputs and a minimum of marketed outputs. A restrictive trade policy for milk products and the emergence of Amul type cooperatives has changed dairy farming practices in the country. Farmers have started receiving a favorable price for their milk, and the milk production system, which was essentially a self-contained one is
now being transformed into a commercial proposition. The crossbred technology has further augmented the viability of the dairy units by increasing the milk production per animal. Subsequently milk production has increased at an exponential rate while the benefits of an increase in milk production also reached the consumers as is apparent from a relatively lower increase in the price of milk.

The favourable price environment for milk producers however appears to have weakened during the 90s, a decline in the real price of milk being noticed after the year 1992. Incidentally, this is also the period in which trade liberalization in the dairy sector was initiated. In the new multilateral trading system trade liberalization is imminent with liberalization of dairy sector being mandatory. In India most of the non-tariff-barriers (NTBs) in dairy have been replaced with tariffs and tariff-rate-quotas (TRQs); now there are pressures to reduce tariff.

In this situation any further liberalization of imports of milk products requires a cautious approach. One must not forget that in India, dairy is not merely another sector/subsector of the economy; this is a source of livelihood for a bulk of the rural poor. Considering its importance the Indian dairy sector may require protection. Selective protection to a sector is not WTO-incompatible, especially in the light of Harbinson’s draft4 in the ongoing millennium round negotiations on agriculture. The nature and magnitude of protection however, needs to be assessed and also postulated without doing much damage to the larger interest of the economy.

**India’s Dairy Sector: A Retrospect**

In the history of dairy development, decade of ’90s has been important on various accounts; India emerged as the largest producer of milk5 in the world and milk emerged as one of the biggest contributor to the value of agricultural output 6 in the country. These encouraging trends in milk production was apparent in the ‘70s following emergence and replication of Amul type cooperatives in the country; subsequently milk production has grew at an exponential rate; per capita availability of milk has also improved, though it is still less than the recommended dose for the country. The milk yield in the country remains one of the lowest in the world. In this backdrop, present chapter reviews performance of dairy sector in the country at the
aggregate and disaggregate levels in separate sections. Performance has also been assessed with respect to the changes in policy environment at the aggregate level.

5.2 Dairy Industry at the Globe

In the present study the world dairy market refers to the major importing and exporting countries of milk products and their trade practices in recent years. Often certain policy changes in these countries influence the aggregate exports and imports of milk products and also their world price. The nature of the world market is also changing following the establishment of the World Trade Organization (WTO). The WTO and associated agreements attempt to establish free and fair trade in the world market, so that cost and quality would emerge as the most important determinant of trade flow in the world market.

After more than seven years of their implementation it is essential to review world trade in the light of the WTO agreements and specifically to examine how India has coped with the changes in the world dairy market. The present section reviews the potential and also the pattern of trade in important milk products, the WTO Agreements and the world trade of milk products in the post-WTO era with immediate implications of the WTO Agreements for India. All these would help us in understanding the existing pattern and future trend of world trade in milk products.

As per the FAO statistics world aggregate milk production in the year 2002 was around 555 million tonnes. Milk production as compared to production in many other commodities is better distributed across the countries. There are only two countries, namely, India (13 per cent) and the United States (12 per cent) which account for more than 10 per cent of the world milk production; while countries in the European Union, Russian federation and Oceania account for around 22, 6 and 4 per cent of world milk production, respectively. World milk production in contrast to the domestic structure of milk production is dominated by cow milk. Cows and buffaloes account for around 85 and 10 per cent of world milk production; while goat, sheep and camels together account for less than 5 per cent of world milk production.
The effect of change in the world prices and volume of trade will be felt by most of the trading countries. The extent of this effect will vary across the countries depending on the degree of openness in the economy, the importance of trade in the respective commodity for the country and similar other factors. In this perspective, it is necessary to review India’s trade policies and performance in milk products.

Milk products have always been an important traded item for India. In the initial years of independence while the country was highly dependent on imports for managing its urban milk supply, import of SMP was allowed at zero import tariff. In successive decades towards the end of the 60s, trade in milk products was either restricted or canalized. With the spate of trade liberalization measures in the early 90s, trade restrictions for many dairy products were dismantled. Imports and exports of dairy products, which were earlier restricted and canalized through the National Dairy Development Board (NDDB), and Agriculture and Processed food Exports Development Authority (APEDA), respectively, were freed, and moderate tariffs were imposed. The import of milk powder, as per one of the earlier GATT agreements, was being allowed at a rate of zero per cent. There has been spurt in imports of milk powders, which were highly subsidized in certain WTO member countries. The zero-duty bound rate in milk powder was finally renegotiated and TRQs was imposed towards the end of the 90s.

A brief review of the trade liberalization in milk products during the 90s suggests that trade in milk products would have become important during the period. The pattern of trade in milk products has therefore been discussed subsequently. In most of the earlier discussions on trade, trade statistics were at the three-digit level and the source for the same was the FAO Trade Year Book. The data here pertains to selected commodities like the SMP, WMP, butter and cheese only. India however exports some traditional indigenous products; trade in milk products has been compared with the DGCIS data since this delineates information at a more disaggregate level, and the present comparison has been restricted at the four-digit level.

The world trade in milk products is important as it accounts for around 25 per cent of the production of milk powder; the corresponding figure is however low (8 per cent) for butter and cheese. In the world dairy market, exports are dominated by the US,
New Zealand, EU, and Australia. India also exports a sizeable amount of certain milk products like sweet meats, butter milk and whey. This is often constrained by the arbitrary quality standards of some developed countries. Selected developed countries, especially the EU and the US by careful orchestration of their domestic and trade policies continue to distort the world dairy market.

In the periodic review of the WTO Agreement on Agriculture, the Harbinson draft attempts to break the deadlock between the developed and developing countries and suggests the road map for trade liberalization. Its time and mode of adoption is however not clear. In India, the trade in milk products has gained in importance with trade liberalization. Trade in most of the milk products has fluctuated during the 90s, the fluctuation being so marked that it is difficult to discern some trend. At the aggregate level India has been a net importer of milk products during a large part of the reference period, though it has emerged as a net exporter in certain years. The reason for this fluctuation may primarily be attributed to the world prices of milk products. This is further reinforced by the trend in protection coefficients of milk products.

India has traditionally been an importer of milk products. Despite the exports of certain milk products that have taken place, the country remained a net importer of milk products during large part of the ‘90s. In India, milk products are protected by a moderate tariff, which will be reduced during the successive round of trade negotiations. The WTO-incompatible subsidies will also reduce though the kind of subsidy or income-based support certain developed countries have been providing will continue. India as compared to efficient producers of milk products such as New Zealand is not price efficient. Considering the differences in the nature of milk production in both the countries, for India to achieve the same level of efficiency is only a remote possibility19. In this situation further liberalization of import of milk products may have large implications for the dairy sector and also for the rural economy of the country.

The present chapter attempts to assess the implications of import liberalization for different components of the dairy sector, producers and consumers across the regions. This chapter first studies the implications of import for the domestic price of milk;
and then the effect of change in milk price has been evaluated for producers and consumers of milk products in the selected states of the country. In India, the real price of milk in the country shows a decreasing trend after the year 1993.

This decline in the price of milk would affect different constituents of the dairy sector in different ways. This has been quantified by adopting the economic surplus approach. These analyses indicate that when the world price is low (milk equivalent price US$640 per quintal) the doctrine of free import would cause a high level of imports of milk products in the country. This will increase consumers’ welfare. This increase is significantly higher than the losses to the producer resulting in an increase in total welfare. The implications of imports have in general been stronger for the coastal states as compared to the land-locked states of the country. The increase in welfare may however, be inferred with some caution since this assumes that world price is inelastic to India’s demand for milk products. The economic surplus approach also ignores loss of employment as a result of decline in milk production following import liberalization.

5.3 Dairy Industry at India and Gujarat

During the last three decades, our nation’s milk producers have transformed Indian dairying from stagnation to world leadership. During this period and before, science and technology (S&T) have played a critical role in supporting our farmer’s efforts.

During the next decade, that role will be further enhanced as we face a number of new challenges. The dairy cooperative movement has been central to the development of dairying in India. The inspiration for this movement was the success of the Khaira District Cooperative Milk Producers’ Union -- better known as Amul. Founded in 1946 in response to the exploitation of district’s dairy farmers, Amul grew rapidly from its initial base of two societies and two hundred liters of milk. That growth, however, posed a challenge that threatened its existence: flush season production of milk exceeded the demand. Yet the cooperative’s success depended on accepting the farmers’ milk year round.
At that time the advanced dairying nations conserved milk by conversion into powder and butter. This could either be sold as products, or combined with fluid milk to extend the supply during the lean season when demand outstripped production. Experts from the North pronounced buffalo milk as unsuitable for conversion into powder. It couldn’t be done, they said. This provided the opportunity for the first major Indian scientific and technological breakthrough. The Amul staff, led by the then General Manager; solved the problems by producing powder from buffalo milk. It would not be an exaggeration to say that this advance in the technology saved Amul and, with it, ensured the future of the as yet unborn Indian dairy cooperative movement. Today it is one of the most successful and the largest cooperative dairy enterprises in the whole of Asia.

Since that time, S&T have produced a large number of breakthroughs that have been critically important to the development of Indian dairying. A wide variety of institutions have contributed including the National Dairy Research Institute, Karnal, agricultural universities, veterinary colleges and, proud to say, the National Dairy Development Board (NDDB).

At the foundation of our dairy industry are the cows and buffaloes that produce most of our milk. India does have some excellent breeds. Among cattle, the Sahiwal, Rathi, Gir and Red Sindhi stand out as milk producers; for the buffalo, pride of place goes to the Murrah, Mehsani and Jaffarbadi. However, these recognized and superior breeds represent but a very small, though valuable, part of our national milch herd. The majority of our animals are nondescript with limited genetic potential.

The most efficient way to improve the potential of our nondescript cattle and buffaloes is through artificial insemination. It was only in the mid-1940s that a major breakthrough was made in this field with the use of antibiotics to ensure that semen would remain viable. Since that time, major advances have been made in semen extension, cryogenic preservation and distribution. Today, NDDB supports this effort through 14 Bull Mother Farms that produce and supply exotic breed bulls to semen stations throughout India. NDDB also directly supports 11 semen stations and has financed a network of 10,556 artificial insemination centers that annually deliver 5
million semen doses to cattle owned by members of 20,000 dairy cooperative societies.

Good genetic potential cannot be realized without good nutrition. In India we face an important challenge: ensuring adequate nutrition for our animals without competing with man for available land and agricultural commodities. The solution has been reliance on crop residues and byproducts. Working with Australian scientists, NDDB has developed several innovations that enhance nutrition directly and by improving digestibility and palatability: urea molasses blocks and urea treatment of straw both improve the diets of our dairy animals and help reduce the methane released into the atmosphere.

NDDB has also supported animal nutrition through the financing of 46 cattle feed plants and supporting these plants with quality control laboratory services. A useful innovation has been the development of protected feed technology which minimizes the degradation of protein and fat in the rumen. Mineral deficiencies are also a constraint to improved animal productivity. NDDB is supporting area surveys resulting in profiles that lead to targeted mineral mixtures to be used as supplements in cattle feeds sold to farmers in these regions. Animal diseases cost our nation’s milk producers thousands of million rupees are lost annually in production.

NDDB’s efforts in this field are a matter of great pride. NDDB has developed a live tissue culture attenuated vaccine to control theileriosis, a blood protozoan infection that is usually lethal in European and crossbred cattle. This vaccine is the only one of its type commercially available in Asia. Foot and Mouth Disease (FMD) is a major cause of reduced milk yields and diminished draught power in India. NDDB has pioneered the effort to identify the prevalent serotypes through analysis of Indian field isolates. In order to ensure that the vaccine would reach India’s farmers, NDDB established a state of the art facility, Indian Immunological, which is the largest FMD vaccine plant in Asia. Mastitis is another endemic disease that undermines the health and productivity of our national milk herd. It is estimated that more than 40 per cent of our cattle and almost 25 per cent of our buffaloes suffer from sub clinical mastitis. NDDB has developed a simple diagnostic aid for its detection at a stage when therapeutic and control measures can reduce losses from decreased production.
Haemonchus contortus, India’s dominant worm species, is a major cause of parasitic gastroenteritis which leads to poor growth, delayed maturity, reduced milk production, lengthened inter-calving periods and the death of young animals. Conventional treatment requires forceful oral administration, placing difficult demands on both the farmer and the animal and the presence of a veterinarian. NDDB has developed medicated feed pellets that kill even drug-resistant worms without the need to restrain the animal. This should lead to far more widespread treatment of worms and lowered losses from parasitic gastroenteritis.

Milk production is, of course, only half of the story. The other half is the sale of milk and milk products that provides the highest returns to our dairy farmers. Here too, S&T have played an important role in development of products, processes, packaging, handling, transport and storage. Among the major breakthroughs have been:

- Automation of khoa production, moving this process from the backyard to the modern dairy.
- Design of the process technology and equipment for manufacture of peda, gulab jamun, cchhana podo, long-life paneer and other Indian milk products.
- Development of continuous lines, including packaging, for fermented milk products like longlife lassi, shrikhand, dahi (yogurt) and misti doi.
- Process technologies for production of Cheddar, Mozzarella and Emmental cheese as well as a variety of cheese spreads using both cow and buffalo milk.
- Preservation of starter cultures for fermented milk products.
- Process of manufacture of dry mixes for gulab jamun and frozen deserts.
- User-friendly milk testing kits.

As satisfying as the achievements have been, the real challenges lie ahead. Among the most important are:

- Ensuring steady growth in productivity while ensuring that dairying remains concentrated in our landless, marginal and small farmer communities.
- Using advanced breeding technologies to accelerate the development of our high potential Indian cattle and buffalo breeds.
Developing quality control methods that are sensitive to the fact that our milk comes from large numbers of small producers.

Ensuring increasing reduction in losses from endemic and epidemic diseases at costs our farmers can afford.

Expanding the variety, improving the quality and maintaining the relative price of India’s dairy products so that they can meet competition from around the world.

Ensuring that the growth of the dairy industry contributes to enrichment of our environment while continuing to benefit low-income producers without compromising our nation’s need for milk.

These and other challenges face the current and next generation of scientists and technologists. Their predecessors have built a solid foundation. The strength of that foundation is due in large part to the fact that India’s dairy farmers have set the research agenda. Beginning with Amul during the 1940s, it was their need that inspired the work of our dairy scientists and technologists. It is the evolving needs of India’s several million dairy farmers that will inspire those who follow.

5.4 Opportunities and challenges

Karmakar & Banerjee write in their paper that Dairy industry is of crucial importance to India. The country is the world’s largest milk producer, accounting for more than 13% of world’s total milk production. It is the world’s largest consumer of dairy products, consuming almost 100% 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 India, about three-fourth of the population live in rural areas and about 38% of them are poor. In 1986-87, about 73% of rural households own livestock. Small and marginal farmers account for three-quarters of these households owning
livestock, raising 56% of the bovine and 66% of the sheep population. According to the National Sample Survey of 1993-94, livestock sector produces regular employment to about 9.8 million persons in principal status and 8.6 million in subsidiary status, which constitute about 5% of the total work force. The progress in this sector will result in a more balanced development of the rural economy.

The total amount of milk produced has more than tripled from 23 million tonnes back in 1973 to 74.70 million tones 26 years later in 1998. The tremendous rise in milk production is primarily the fallout of the dairy farming policy reflected in Operation Flood. Following the success of dairy farming policy, the Government has set up a dairy processing policy, reflected in the Milk and Milk Products Order. In addition, the Government uses a variety of import restrictions to protect its domestic dairy market.

The milk processing industry is small compared to the huge amount of milk produced every year. Only 10% of all the milk is delivered to some 400 dairy plants. A specific Indian phenomenon is the unorganized sector of milkmen, vendors who collect the milk from local producers and sell the milk in both, urban and non-urban areas, which handles around 65-70% of the national milk production. In the organized dairy industry, the cooperative milk processors have a 60% market share. The cooperative dairies process 90% of the collected milk as liquid milk whereas the private dairies process and sell only 20% of the milk collected as liquid milk and 80% for other dairy products with a focus on value-added products.

The huge volume of milk produced in India is consumed almost entirely by the Indian population itself, in a 50-50 division between urban and non urban areas. Increasingly, important consumers of the dairy industry are fast-food chains and food and non-food industries using dairy ingredients in a wide range of products.

In spite of having largest milk production, India is a very minor player in the world market. India was primarily an import dependent country till early seventies. Most of the demand-supply gaps of liquid milk requirements for urban consumers were met by importing anhydrous milk fat / butter and dry milk powders. But with the onset of Operation Flood Programme, the scenario dramatically changed and commercial
imports of dairy products came to a halt except occasional imports of very small quantities. In the 1990s, India started exporting surplus dairy commodities, such as SMP, WMP, butter and ghee. The Agricultural and Processed Food Products Export Development Authority (APEDA) regulated the export and import of dairy products till early 1990s. However, in the new EXIM Policy announced in April 2000, the Union Government has allowed free import and export of most dairy products.

The major destinations for Indian dairy products are Bangladesh (23.1%), UAE (15.4%), US (15.6%) and Philippines (8.9%). In terms of products, SMP is the most important product accounting for about 63% of total export volume, followed by ghee and butter (11.7%) and WMP. Export figures clearly demonstrate that the Indian dairy export is still in its infancy and the surpluses are occasional. Indigenous milk products and desserts are becoming popular with the ethnic population spread all over the world. Therefore, the export demand for these products will increase and hence, there is a great potential for export.

On the other hand, there has been a sharp increase in import of dairy products (especially milk powders) after trade liberalization. As per the latest report of Foreign Trade Statistics of December 2004, the imports of dairy products (milk and cream) has reached a cumulative total of 22.145 million tones for the period April - March 2004, as compared to only 1473 million tones for the same period during the previous year. The main reasons for sharp rise in imports are huge export subsidies given by developed countries (mainly the US and EU). India has recently concluded a tariff rate quota to deal with US, EU and Australia on imposing custom duty of 15% on imports of SMP and WMP upto 10,000 tonnes and 60% on imports beyond this level.

There are five key areas of concern in the Dairy Industry which are discussed below.

(i) Competitiveness, cost of production, Productivity of animals etc.

The demand for quality dairy products is rising and production is also increasing in many developing countries. The countries which are expected to benefit most from any increase in world demand for dairy products are those which have low cost of production.
Therefore, in order to increase the competitiveness of Indian dairy industry, efforts should be made to reduce cost of production. Increasing productivity of animals, better health care and breeding facilities and management of dairy animals can reduce the cost of milk production. The Government and dairy industry can play a vital role in this direction.

(ii) Production, processing and marketing infrastructure

If India has to emerge as an exporting country, it is imperative that we should develop proper production, processing and marketing infrastructure, which is capable of meeting international quality requirements. A comprehensive strategy for producing quality and safe dairy products should be formulated with suitable legal backup.

(iii) Focus on buffalo milk based specialty

Dairy industry in India is also unique with regard to availability of large proportion of buffalo milk. Thus, India can focus on buffalo milk based specialty products, like Mozzarella cheese, tailored to meet the needs of the target consumers.

(iv) Import of value-added products and export of lower value products

With the trade liberalization, despite the attempts of Indian companies to develop their product range, it could well be that in the future, more value-added products will be imported and lower value products will be exported. The industry has to prepare themselves to meet the challenges.

(v) Provisions of SPS and TBT

At the international level, we have to ensure that provisions of SPS and TBT are based on application of sound scientific principles and should become defacto barriers to trade.
New Challenges of Globalization and Trade Liberalization in Dairy Industry

The NDDB has recently put in place Perspective 2010 to enable the cooperatives to meet the new challenges of globalization and trade liberalization. Like other major dairying countries of the world, the Indian cooperatives are expected to play a predominant role in the dairy industry in future as well. However, India is in the mean time, attaining its past glory and is once again becoming ‘DOODH KA SAGAR’. But, what percentage of this SAGAR is handled by the cooperatives - just a little over 7%. Since liberalization of the dairy sector in 1991, a very large number of private sector companies / firms have, despite MMPO, established dairy factories in the country. The share of the total milk processing capacity by private sector is 44% of total installed capacity of 73 MLPD (Million Liters Per Day) in the country. Therefore, the total share of the organized sector, both cooperatives as well as the private sector is barely 12%. What is, therefore, disquieting is that as much as 88% share of the total milk production is commanded by the unorganized sector - who specializes in selling sub-standard, unpasteurised milk more often than not adulterated with harmful chemicals.

Besides, growth in milk production is likely to continue at the present rate of 4.4% in the near future. Who is going to handle this incremental milk? We must bear in mind is both income and price what we must bear in mind both income & price elasticity account for approximately 15% of the total expenditure of food. Demand for milk, at current rate of income growth is estimated to grow at 7% per annum. Interestingly, demand for milk is expected to grow steadily over the next two decades as the low income rural and urban families who have higher expenditure elasticity would also increase their income due to new economic environment. Let us now look at some other economic indicators. According to the World Bank, India is the fourth largest economy in the world going by the purchasing power parity estimates. Further, India has been identified as among the first 10 emerging markets in the world. India has the vastest domestic market in the world with over one billion consumers - a majority of whom are vegetarians with drinking of milk as habit. The untapped potential of the dairy sector is immense and opportunity to set up a new dairy venture is great. In the works of Dr. Amrita Patel, Chairperson, NDDB, there is enough place under the
scheme for both private and cooperative sectors. Notwithstanding the above potential it is cautioned that, entering dairy sector is not going to be a cakewalk.

Globalization and Liberalization are the Mantras of the new economy today, which is now on the fast track. Industrial production is rapidly moving forward. The dairy industry is no exception. With the World Trade Organization (WTO) coming into effect, from 01 April 2001 and the imports and exports getting liberalized in the global economy, the dairy industry, which includes dairy products, faces both an opportunity for growth as well as a threat for its growth. There is no doubt that there is tremendous scope for the growth of the dairy industry in the new millennium. The product mix of world dairy trade is likely to shift further towards cheese. This has been developed in the world markets. As the market opens up, consumption trends associated with these markets will have increasing influence on the world trade. Whole milk powder is likely to continue to be a substantial beneficiary and growth substantially in the middle eastern countries.

As standards of living in the importing country rises, exporting countries will increasingly concentrate on whole milk powder and cheese with the assistance of butter and skimmed milk powder. There is vast potential for the export of dairy products, the cost of milk production in India being the lowest. The major factor influencing production of bye products is the newer uses that may be developed through R & D support. Milk proteins are being utilized increasingly replacing animal and vegetable proteins in special bakery products and instant foods.

Through the application of membrane proven process, milk proteins isolates are being produced. These are being utilized for ice milk mixes and other such applications. Most of the dairy plants in the Government, Cooperatives and Private Sector produce almost similar dairy products like varieties of milk, butter, ghee, skimmed milk powder and whole milk powder. There are 7 large-scale cheese manufacturers and 14 manufacturers are producing infant foods and malted milks. There is immense scope for the broadening of the products range and some of the products, which are likely to have considerable demand in the coming decade, have been identified.
The cheese market, presently valued at about Rs.80 crore is growing at about 9% annually. There are more than thousand varieties of cheese, which have been listed out of which cheddar; mozzarella, gouda and processed cheeses are being manufactured in India. Pizza is becoming a very popular item in the market. This segment alone commands 5% of the share in the cheese market and other area is fermented milk products. Dahi even though is a Rs.15000 crore market, the share of the organized sector is only around 10%. This product has immense potential for growth. Varieties of milk shakes are also increasing wherein milk and fruit pulp are mixed in different proportions to produce different beverages. Some of the milk and fruit based beverages which are likely to have demand are a combination of milk with mango, banana, sapota, strawberry, papaya, etc. Some of these beverages can also be produced in dehydrated form and can be an excellent health food.

There are varieties in traditional milk based sweets, manufactured in the country. The market size is around Rs.12000 crore. However, there are very few nationally known brands in this category. Many of the organized dairies are involved in the manufacture of varieties of milk based sweets: pedha, paneer, shirkhand, etc. These are now restricted to certain areas only but can go national. As the world is getting integrated into one market, quality certification is becoming essential in the market. However, there are very few plants in the country, which have successfully obtained ISO, HACCP certification. There is scope for introducing newer plants adopting newer processes by the dairy industry in the country. Packaging of dairy products is also another very promising area. NRI and overseas investments can take place in manufacturing dairy processing equipment, fruit packaging equipment and equipments for biotechnology related dairy industry.
5.5 Dairy Units for Research Work:

**General Information of AMUL dairy:**

- **Name of the Dairy:** Kaira District Co-operative Milk Producer’s Union (AMUL)
- **Address of the Dairy:** AMUL Dairy Road, Anand, Gujarat, India
- **Contact No.:** 02692 – 256124, 240225
- **Web Site:** [www.amul.coop](http://www.amul.coop)
- **Year of Establishment:** 1946
- **Type of ownership:** Co-operative Organization
- **Working Shift:** 3 shifts
- **Products of Dairy:** All milk products and milk
Introduction:

The brand name ‘AMUL’ is derived from the Sanskrit term ‘AMULYA’, which mean very precious or incomparable. This was suggested by the Kaira District Co-operative Milk Producer’s Union (Kaira Union) and the respective quality experts in the year 1955. One finds similar sounding words with the same meaning in several Indian languages too. The very concept of Kaira Union’s system of co-operative dairying was destined to become ‘precious’ for millions of farmers.

AMUL also stands for Anand Milk Union Limited.

History of AMUL:

The dedicated of AMUL’s achievement in the course of co-operative dairy movement to the trio crusader, Sardar Vallabhbhai Patel, Tribhuvandas Patel and Dr. Verghese Kurien.

A farmer in Kaira district, as elsewhere in India, derived his income almost entirely from seasonal crops. The income from milk was paltry and could not be depended upon. The main buyers were milk traders of Polson Ltd. – a privately owned company that enjoyed monopoly for supply of milk from Kaira to the government’s milk scheme Bombay.

Farmers of Kaira district were thus at the mercy of milk tracers who dictated the price as they had nowhere to turn to. The unfair system bred widespread discontent. The farmers appealed to Sardar Patel, a great leader of India’s Freedom Movement, for help. In 1945, Sardar Patel inspired the milk producers of private merchants and British Government policies. Sardar Patel advised them to market the milk through a co-operative of their own. He sent his trusted deputy, Shri Morarji Desai, to organize the farmers. At a meeting held at Samarkha village on January 4, 1946, it was resolved that milk co-operative societies would be organized in each village of Kaira District to collect milk from the producers and federated into a district union. The government should be asked to buy milk from the union.

The co-operative movement began with a milk strike. When the government turned down the demand, Kaira farmers organized a milk strike. For 15 days not a drop of
milk was sold to the traders. Accordingly, Tribhuvandas Patel integrated and motivated the farmers who drained away their milk and sacrificed the income of the milk they produced for 15 days at a stretch. The Bombay milk scheme was badly affected. The milk commissioner of Bombay visited Anand, assessed the situation and decided to concede to the farmers’ demand.

The farmers’ strong determination and co-operative spirit forced the British to surrender to the farmers’ movement. Tribhuvandas Patel advocated maximum return to the farmers because it is the farmers who produce milk.

Dr. Kurien contributed his technological and managerial ingenuity to this movement and replicated “AMUL Model” across the country. It has been proved that the principle of “No Co-operation, No Progress”. Thus was born the Kaira District Co-operative Milk Producers’ Union Ltd., Anand. It was formally registered on December 14, 1946.

**Birth of AMUL**:

The Kaira District Co-operative Milk Producers’ Union Ltd., Anand was registered on December 14, 1946. Similar milk unions came up in other districts of Gujarat. They formed the GCMMF Ltd in the year 1973.

Marketers who believed that only English sounding brand names would succeed in post British. India proved this belief wrong by the brand name “AMUL”. Its production networking and advertising have been much admired. The ultimate tribute to AMUL was paid by the late Prime Minister Shri Lal Bahadur Shastri. He advised Dr. Kurien to replicate the AMUL model all over India during his visit to Anand in the year 1964. This was done by National Dairy Development Board (NDDB) under the operation and flood programmes.

India now has 1,03,000 villages milk co-operatives with more than 115 lacs farmer members. These concerted efforts in Dairy development have made India the largest producers of milk in the world today.
Need Shows Vision:

In the beginning, there were only few farmers supplying about 250 litres of milk a day. Soon the number increased and the quantity of milk handled rose to 5000 litres a day.

With the growth, occurred problems. Milk production is higher in winter, and the Bombay Milk Scheme did not accept the extra milk offered. The farmers were forced to sell the surplus milk to traders at very low rates. This led to the decision to set up a plant to process the surplus milk into butter and milk powder.

With the financial help from UNICEF, assistance from the Government of New Zealand, under the Colombo plan, and technical assistance provided by FAO, a Rs.5 million factory to manufacture milk powder and butter was planned. Dr. Rajendra Prasad laid the foundation on November 15, 1954, the then President of India. On October 31, 1955, Pandit Jawaharlal Nehru, the then Prime Minister, declared it open.

In 1958, the plant was expanded to manufacture sweetened condensed milk. Two years later, Shri Morarji Desai, by then Finance Minister, inaugurated a new wing designed to manufacture 600 tonnes of cheese and 2500 tonnes of baby food every year. (The baby food formula was developed with the help of the Central Food Technological Research Institute, Mysore). This was the first time in the world that cheese or baby food was processed from buffalo milk on a large commercial scale.

A plant to manufacture balanced cattle feed, donated by OXFAM, was formally commissioned on October 31, 1964, by Shri Lal Bahadur Shastri, the then Prime Minister of India.

At the request of the Government of India new dairy with a capacity to manufacture 40 tonnes of milk powder and 20 tonnes of butter a day was completed in 1963. This was meant to meet the requirements of India’s defence forces. Shri Morarji Desai declared the dairy open in April 1965. By now, the dairy complex could handle 5,00,000 litres of milk a day. The capacity was raised to 7,50,000 litres a day in 1974.
Growth Of AMUL:

- Co-operative movement spread like wild fire in the state.
- Rapid increase in milk procurement.
- Identification of Bombay liquid milk market.
- Investment in manufacturing plants that produce milk powder, cheese, butter and condensed milk.
- Launch of AMUL as a brand.

Structure Of AMUL Dairy:

State Marketing Federation.
All dairies in a state
GCMMF in Gujarat
18 state federation in India

District Dairy Union
Every District in the state
12 district in the state
12 district unions in Gujarat
180 Unions all over India
Village Co-operative society
All villages in a district
11,200 villages in Gujarat
1,00,000 villages in India

Milk Producers
All Milk Producers in a village
2-3 Million in Gujarat
11 Million in India

Activities Of AMUL :

Quality Movement :
All dairy plants under AMUL are ISO 9001; 2000 and HACCP certified for excellence in maintaining health and hygiene, house keeping and over all management.

Public Relations :
‘AMUL’ being a global brand & fascinates people across the world. This year in 2006 altogether 1,17,112 guests visited dairy plants and museum at an average of 321 visitors per day.
Advertising:

After 50 years it was first launched, Amul's sale figures have jumped from 1000 tonnes a year in 1966 to over 25,000 tonnes a year in 1997. No other brand comes even close to it. All because a thumb-sized girl climbed on to the hoardings and put a spell on the masses.

Bombay: Summer of 1967. A Charni Road flat. Mrs. Sheela Mane, a 28-year-old housewife is out in the balcony drying clothes. From her second floor flat she can see her neighbours on the road. There are other people too. The crowd seems to be growing larger by the minute. Unable to curb her curiosity Sheela Mane hurries down to see what all the commotion is about. She expects the worst but can see no signs of an accident. It is her four-year-old who draws her attention to the hoarding that has come up overnight. "It was the first Amul hoarding that was put up in Mumbai," recalls Sheela Mane. "People loved it. I remember it was our favourite topic of discussion for the next one week! Everywhere we went somehow or the other the campaign always seemed to crop up in our conversation."

Call her the Friday to Friday star. Round eyed, chubby cheeked, winking at you, from strategically placed hoardings at many traffic lights. She is the Amul moppet everyone loves to love (including prickly votaries of the Shiv Sena and BJP). How often have we stopped, looked, chuckled at the Amul hoarding that casts her sometime as the coy, shy Madhuri, a bold sensuous Urmila or simply as herself, dressed in her little polka dotted dress and a red and white bow, holding out her favourite packet of butter.

For 30 odd years the Utterly Butterly girl has managed to keep her fan following intact. So much so that the ads are now ready to enter the “Guinness Book of World Records” for being the longest running campaign ever. The ultimate compliment to the butter came when a British company launched butter and called it ‘Utterly Butterly’, last year.

It all began in 1966 when Sylvester daCunha, then the managing director of the advertising agency, ASP, clinched the account for Amul butter. The butter, which had been launched in 1945, had a staid, boring image, primarily because the earlier
advertising agency which was in charge of the account preferred to stick to routine, corporate ads.

In India, food was something one couldn't afford to fool around with. It had been taken too seriously, for too long. Sylvester daCunha decided it was time for a change of image.

The year Sylvester daCunha took over the account, the country saw the birth of a campaign whose charm has endured fickle public opinion, gimmickry and all else.

The Amul girl who lends herself so completely to Amul butter, created as a rival to the Polson butter girl. This one was sexy, village belle, clothed in a tantalizing ‘choli’ all but covering her upper regions. "Eustace Fernandez (the art director) and I decided that we needed a girl who would worm her way into a housewife's heart. And who better than a little girl?" says Sylvester daCunha. And so it came about that the famous Amul Moppet was born.

That October, lamp kiosks and the bus sites of the city were splashed with the moppet on a horse. The baseline simply said, ‘Thorough bread’, ‘Utterly Butterly Delicious Amul’. It was a matter of just a few hours before the daCunha office was ringing with calls. Not just adults, even children were calling up to say how much they had liked the ads. "The response was phenomenal," recalls Sylvester daCunha. "We knew our campaign was going to be successful."

“For the first one year the ads made statements of some kind or the other but they had not yet acquired the topical tone. In 1967, Sylvester decided that giving the ads a solid concept would give them extra mileage, more ‘dum’, so to say. It was a decision that would stand the daCunhas in good stead in the years to come”.

In 1969, when the city first saw the beginning of the Hare Rama Hare Krishna movement, Sylvester daCunha, Mohammad Khan and Usha Bandarkar, then the creative team working on the Amul account came up with a clincher - 'Hurry Amul, Hurry Hurry'. Bombay reacted to the ad with a favor that was almost as devout as the Iskon fever.
That was the first of the many topical ads that were in the offing. From then on Amul began playing the role of a social observer. Over the years the campaign acquired that all important Amul touch.

India looked forward to Amul's evocative humour. If the Naxalite movement was the happening thing in Calcutta, Amul would be up there on the hoardings saying, "Bread without Amul Butter, ‘cholbe na cholbe na (won't do, won't do)’. If there was an Indian Airlines strike Amul would be there again saying, Indian Airlines Won't Fly Without Amul.

There are stories about the butter that people like to relate over cups of tea. "For over 10 years I have been collecting Amul ads. I especially like the ads on the backs of the butter packets," says Mrs. Sumona Varma. What does she do with these ads? "I have made an album of them to amuse my grandchildren," she laughs. "They are almost part of our culture, aren't they? My grandchildren are already beginning to realize that these ads are not just a source of amusement. They make them aware of what is happening around them."

Despite some of the negative reactions that the ads have got, DaCunhas have made it a policy not to play it safe. There are numerous ads that are risque in tone.

"We had the option of being sweet and playing it safe, or making an impact. A fine balance had to be struck. We have a campaign that is strong enough to make a statement. I didn't want the hoardings to be pleasant or tame. They have to say something," says Rahul daCunha.

"We ran a couple of ads that created quite a furore," says Sylvester daCunha. "The Indian Airlines one really angered the authorities. They said if they didn't take down the ads they would stop supplying Amul butter on the plane. So ultimately we discontinued the ad," he says laughing. Then there was the time when the Amul girl was shown wearing the Gandhi cap. The high command came down heavy on that one. The Gandhi cap was a symbol of independence; they couldn't have anyone not taking that seriously. So despite their reluctance the hoardings were wiped clean. "Then there was an ad during the Ganpati festival which said, Ganpati Bappa More Ghya (Ganpati Bappa take more). The Shiv Sena people said that if we didn't do
something about removing the ad they would come and destroy our office. It is surprising how vigilant the political forces are in this country. Even when the Enron ads (Enr On Or Off) were running, Rebecca Mark wrote to us saying how much she liked them."

There were other instances too. Heroine Addiction, Amul's little joke on Hussain had the artist ringing the daCunhas up to request them for a blow up of the ad. "He said that he had seen the hoarding while passing through a small district in UP. He said he had asked his assistant to take a photograph of himself with the ad because he had found it so funny," says Rahul daCunha in amused tones. Indians do have a sense of humour, afterall.

From the Sixties to the Nineties, the Amul ads have come a long way. While most people agree that the Amul ads were at their peak in the Eighties they still maintain that the Amul ads continue to tease a laughter out of them.

Where does Amul's magic actually lie? Many believe that the charm lies in the catchy lines. That we laugh because the humour is what anybody would enjoy. They don't pander to your nationality or certain sentiments. It is pure and simple, everyday fun.

Its advertising has also started using tongue in check sketches starring the AMUL baby commenting jovially on the latest news or current events.

The pun in her words has been popular. The AMUL ads based on a theme, now applying for the Guinness records for being the longest running and campaign ever. Sylvester da-cuncha, was the managing director of the advertising agency, ASP that created the campaign in 1967 whose charm has endured pickle public opinion gimmickry and all else.

To add up, AMUL is advertised at gigantic level by sponsoring the most popular show on Star Plus named, AMUL Star Voice of India and AMUL Chote Ustad, the children singing talent show, running successfully on Star Plus.

**Other Players :**

AMUL has been able to withstand the onslaught of private and foreign players in the dairy industry and has also been able to export products in limited quantities. The
success of AMUL resulted in similar organisations being set up by state governments throughout India most of which had reasonable success. Examples are Vijaya in Andhra Pradesh, Aavin in Tamil Nadu and others.

Other co-operative rivals of AMUL include National Dairy Development Board (NDDB) with its Mother Dairy and Sugam brands. With AMUL entering the sports drink market, its rivals now include Coca Cola and Pepsi Company.

**AMUL Products:**

AMUL means "priceless" in Sanskrit. The brand name "Amul," from the Sanskrit "Amoolya," was suggested by a quality control expert in Anand. Variants, all meaning "priceless", are found in several Indian languages. Amul products have been in use in millions of homes since 1946. Amul Butter, Amul Milk Powder, Amul Ghee, Amulspray, Amul Cheese, Amul Chocolates, Amul Shrikhand, Amul Ice cream, Nutramul, Amul Milk and Amulya have made Amul a leading food brand in India. (Turnover: Rs. 42.78 billion in 2006-07). Today Amul is a symbol of many things – ‘Of high-quality products sold at reasonable prices’, ‘Of the genesis of a vast co-operative network’, ‘Of the triumph of indigenous technology’, ‘Of the marketing savvy of a farmers' organization’ and ‘Of a proven model for dairy development’.

**List of Products Marketed:**

**Bread spreads:**

- Amul Butter
- Amul Lite Low Fat Breadsprad
- Amul Cooking Butter

**Cheese Range:**

- Amul Pasteurized Processed Cheddar Cheese
- Amul Processed Cheese Spread
- Amul Pizza (Mozarella) Cheese
- Amul Shredded Pizza Cheese
- Amul Emmental Cheese
- Amul Gouda Cheese
- Amul Malai Paneer (cottage cheese)
- Utterly Delicious Pizza

**Mithaee Range (Ethnic sweets):**

- Amul Shrikhand (Mango, Saffron, Almond Pistachio, Cardamom)
- Amul Amrakhand
- Amul Mithaee Gulabjamuns
- Amul Mithaee Gulabjamun Mix
- Amul Mithaee Kulfi Mix
- Avsar Ladoos

**UHT Milk Range:**

- Amul Shakti 3% fat Milk
- Amul Taaza 1.5% fat Milk
- Amul Gold 4.5% fat Milk
- Amul Lite Slim-n-Trim Milk 0% fat milk
- Amul Shakti Toned Milk
- Amul Fresh Cream
- Amul Snowcap Softy Mix

**Pure Ghee:**

- Amul Pure Ghee
- Sagar Pure Ghee
- Amul Cow Ghee

**Infant Milk Range:**

- Amul Infant Milk Formula 1 (0-6 months)
- Amul Infant Milk Formula 2 (6 months above)
- Amulspray Infant Milk Food
Milk Powders:

- Amul Full Cream Milk Powder
- Amulya Dairy Whitener
- Sagar Skimmed Milk Powder
- Sagar Tea and Coffee Whitener

Sweetened Condensed Milk:

- Amul Mithaimate Sweetened Condensed Milk

Fresh Milk:

- Amul Taaza Toned Milk 3% fat
- Amul Gold Full Cream Milk 6% fat
- Amul Shakti Standardised Milk 4.5% fat
- Amul Slim & Trim Double Toned Milk 1.5% fat
- Amul Saathi Skimmed Milk 0% fat
- Amul Cow Milk

Curd Products:

- Yogi Sweetened Flavoured Dahi (Dessert)
- Amul Masti Dahi (fresh curd)
- Amul Masti Spiced Butter Milk
- Amul Lassee

Amul Icecreams:

- **Royal Treat Range** (Butterscotch, Rajbhog, Malai Kulfi)
- **Nut-o-Mania Range** (Kaju Draksh, Kesar Pista Royale, Fruit Bonanza, Roasted Almond)
- **Nature's Treat** (Alphanso Mango, Fresh Litchi, Shahi Anjir, Fresh Strawberry, Black Currant, Santra Mantra, Fresh Pineapple)
- **Sundae Range** (Mango, Black Currant, Sundae Magic, Double Sundae)
• **Assorted Treat** (Chocobar, Dollies, Frostik, Ice Candies, Tricone, Chococrunch, Megabite, Cassatta)
• **Utterly Delicious** (Vanila, Strawberry, Chocolate, Chocochips, Cake Magic)

**Chocolate & Confectionery:**

• Amul Milk Chocolate
• Amul Fruit & Nut Chocolate

**Brown Beverage:**

• Nutramul Malted Milk Food

**Milk Drink:**

• Amul Kool Flavoured Milk (Mango, Strawberry, Saffron, Cardamom, Rose, Chocolate)
• Amul Kool Cafe

**Health Beverage:**

• Amul Shakti White Milk Food

**The major export products are:**

**Consumer Packs**

• Amul Pure Ghee
• Amul Butter
• Amul Shrikhand
• Amul Mithaee Gulabjamun
• Nutramul Brown Beverage
• Amul Cheese
• Amul Malai Paneer
• Amul UHT Milk (Long Life)
  • Amul Gold Milk
  • Amul Taaza Double Toned Milk
• Amul Lite Slim and Trim Milk
• Amul Fresh Cream

Bulk Packs

• Amul Skimmed Milk Powder
• Amul Full Cream Milk Powder

Many of our products are now available in the USA, Gulf Countries and Singapore.

Entertainment:

Books

• The Amul India Story : Ruth Herediya
• Management Kurien Style : MV Kamath
• The Unfinished Dream : V Kurien

Feature Films

• Sardar: The Iron Man of India : A film by Ketan Mehta
• Manthan: A Film by Shyam Benegal

Awards:

• Ramkrishna Bajaj National Qality Award-2003

• Amul - The Taste Of India (Gcmmf)Receives International Cio 100 Award For Resourcefulness
• Rajiv Gandhi National Quality Award - 1999
Amul "Utterly Delicious" Parlours:

Amul has recently entered into direct retailing through "Amul Utterly Delicious" parlours created in major cities Ahmedabad, Bangalore, Baroda, Delhi, Mumbai, Hyderabad and Surat. Amul has plans to create a large chain of such outlets to be managed by franchisees throughout the country. We have created Amul Parlours at some prominent locations in the country, which are run by the company or its wholesale dealers:

1. Delhi Metro Rail Corporation
2. The Somnath Temple
3. National Institute of Design
4. Infosys Technologies in Bangalore, Mysore & Pune
5. Wipro campus in Bangalore
6. L.J. College, Ahmedabad
7. Ahmedabad Airport
8. Surat Municipal Corporation
9. Delhi Police
10. Gujarat State Road Transport Corporation
11. Jubilee Mission Medical College, Trichur, Kerala
12. Sanjay Gandhi Hospital Parlour, Amethi
13. Indian Institute of Management, Kolkata
14. Cafe Amul, MDG, Gandhinagar

"Amul Utterly Delicious" parlours are an excellent business opportunity for investors, shopkeepers and organizations. In order to come closer to the customer, we have decided to create a model for retail outlets, which would be known as "Amul Preferred Outlets" (APO).
GENERAL INFORMATION OF BARODA DAIRY

Name of the Dairy: Baroda District Co-operative Milk Producer’s Union
Address of the Dairy: Opposite ONGC, Makarpura Road, Baroda, Gujarat, India.
Contact: 0265 – 2606431
Website: www.barodadairy.com
Year of Establishment: 1957
Type of ownership: Co-operative Organization
Working shift: Three Shifts
Products of Dairy: Milk, Ghee, Icecream, Paneer, Buttermilk, Sweets, etc.

BARODA Dairy

History of BARODA Dairy:
Baroda Dairy is a prestigious popular co-operative organization of farmers of Vadodara District, providing good quality milk to the people of Sayaji Nagari since Last 50 Years. Baroda Dairy is a one of the leading dairies in INDIA having turnover of Rs.3000 Million(2006-07) and has a 1198 member milk cooperative societies(2005-06), 800 Milk centers for distribution and sales of Milk, 600 Retailers
for sales of milk products and 1600 dedicated employees. The mission is to help farmers of the district to grow & improve life style of rural people.

The district of Baroda is well demarcated by the river Narmada & Mahi in the South & North representively by the hilly tracks, ranging from Pavagadh to Saputara in the East. With an aim to relieve the milk prince of their milk and to supply good quality milk to the citizens of Baroda, the Milk Union was established on December 24, 1957.

The milk union got guidance & help in all respects from the neighboring milk union ‘AMUL’. Shri Tribhuvandas K. Patel & the General Manager Dr. V. Kurien supported & guided the Baroda milk union. The union had strong leadership of Shri. Mananbhai S. Patel, Founder & Chairman, & Shri Jashwantlal Shah, Dairy Minister in the state of Mumbai, under whose dynamic leadership, the foundation stone of this union was laid.

First six milk co-operative societies were started from where the milk was brought for distribution. But in the absence of adequate facilities for pasteurized milk from Amul union was brought for distribution to the consumers of Baroda Dairy.

Shri T.K.Patel laid foundation of the milk Co-operative dairy movement in Gujarat. The foundation of 50,000/- LPD dairy plant started on 24, August 1962. In the year 1963-64, the union started its milk procurement from 120 milk co-operative societies. The plant commissioned on April 25, 1965 was inaugurated by Shri Morarji Desai, the tenth financial minister of India. The bottling collaboration was initiated to supply the reconstitutes milk to school children on matching contribution basis.

Baroda District lies in the centre of Gujarat, a state of Western India, well-known for co-operative dairying. To the south and north of the district of Baroda lies the river Narmada and the river Mahi. The hilly track ranges form the hillock of Pavagadh to the Saputara hills in the east, leaving fine strata of soil, to the west of the district and the Baroda city. Baroda city is situated on the bank of river Viswamitri. Some salient features of the district are as under:
1. Area in sq. kms. - 7,794

2. No. of Talukas. - 12 (Revenue Block)

3. Arable land - 6,11,300 Hectares

4. Irrigated land - 1,27,900 Hectares

5. Major crops - Cotton, Paddy, Tobacco, Arhar, Banana, etc.

6. Cattle population

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<th>Local cows</th>
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<tr>
<td>1992</td>
<td>1,61,500</td>
<td>82,000</td>
<td>6,400</td>
</tr>
</tbody>
</table>

7. Human population (Census - 1991)

Urban - 14,66,000

Rural - 16,07,000

Total - 30,73,000

**Foundation Of Dairy :**

With the view to relieve the milk producer from the exploitation by the private vendors, and to give a remunerative price for their milk and to supply good quality of milk to the citizen of Baroda city, the milk union was established on 24th December, 1957. The milk union got guidance and help in all respect from the neighbouring milk union of "Amul" especially from the Founder Chairman of "Amul", Shri T.K. Patel and then the general manager, Dr.V.Kurien who supported and guided the Baroda Milk Union. This union has strong leadership of Shri Maganbhai Patel, Founder Chairman and Shri Jashvantlal Shah, Deputy Minister in the then state of Bombay.
Under their dynamic leadership the foundation stone of this union was laid. First six milk co-operative societies became founder members of this union from where the milk was brought for distribution, but, in the absence of adequate facilities for chilling and pasteurisation it was thought best to postpone the rural milk collection. In turn, pasteurised hygienic milk from Amul Milk Union was brought for distribution to the consumers of the Baroda city. The foundation stone of 50,000 LPD Dairy Plant was laid on 24th August 1962, by Shri T.K. Patel, the Doyen of the Co-operative Dairy Movement in Gujarat. In the year 1963-64 milk distribution through 21 distribution centres was started in an organised way. In the year 1964-65, the union started its milk procurement from 120 milk co-operative societies.

The dairy plant commissioned on 25th April, 1965, was inaugurated by Shri Morarjibhai Desai, the then Finance Minister, Government of India. Under the milk distribution system, pasteurized milk in the bottles was supplied to the city consumers. The bottling plant was set by UNICEF in collaboration with CARE to supply the reconstitutes milk to school children on matching contribution basis.

**Group’s Social Commitment:**

- Animals Health Breeding
- Progeny testing Scheme
- Animal Nutrition activities
- Cattle feed – Baroda dan
- Various educational programmes
- Village leadership development programmes (ICD)
- Village cleanliness Programmes
- Mahila Grahak Jagruti Abhiyan

**Processing Of Milk In The Plant:**

This dairy plant is mainly a liquid milk plant having the capacity to handle 2,50,000 litres of milk in the peak season. At present, the daily average milk receipt is nearly 1,62,000 litres. Out of nearly 800 functional DCS raw milk from 600 DCS is received
at this dairy dock and from 200 DCS the milk is received at the chilling centre located 80 kms. away from the dairy plant. Out of the total milk receipt nearly 55% is buffalo milk and the rest is cow milk. While weighment from individual society separate samples are drawn for testing of Fat & SNF for buffalo milk and cow milk and then it is mixed together. The raw milk is then filtered, chilled and pasteurised before conversion in different types of milk like the standard milk, toned milk, whole milk etc.

Surplus milk fat is converted into "Cream" which in turn is utilised for making "White Butter", Ghee, Table Butter, etc. "Amul" brand of table butter nearly 5 MT/day is manufactured here. There is continuous butter making facility formaking nearly 2.0 tonnes of white butter daily. The sugared toned milk is converted into the form of sterilised flavoured milk and packed in 200ml. bottles. Whereas toned milk, standard milk and full cream milk duly pasteurised and chilled is filled in 500ml. polyethylene sachets for distribution in the city of Baroda through 410 vending booths. Recently, butter-milk manufacturing and its packing in one litre polyethylene pouch under "Goras" brand has been started ("Jeera" chhas in 200 ml.).

This dairy plant has milk drying plant unit which can convert liquid milk in 3.5 ton's powder daily. However, in the present shortage of milk faced by this plant, the milk drying unit is not run regularly at present. Utmost care is taken in the manufacturing of all the milk products in this plant to meet with the requisite standards of PFA and ISI. As a result, this milk drying plant is permitted to manufacture of milk powder as per ISI mark. The table butter, ghee, and milk powder manufactured here are meeting the stringent standards of hygiene hence this milk union is manufacturing these products under the trade-mark of "Amul".In order to standardise milk products like peda, shrikhand, etc., the R&D wing of NDDB has implemented some projects and Sugam unit of Baroda Dairy is one such Unit.

Nearly 20,000 LPD of milk is being converted into indigenous sweets like peda, gulabjamun, and shrikhand. All of which are manufactured under stringent standard of quality. Shrikhand manufactured in this plant is the first Indian sweet which has got an ISI standard. Different varieties of ice-creams are also manufactured in this unit. Cheese Spread of three different flavours i.e. Black Pepper, Garlic & Plain are prepared here for which raw cheese from Amul is used. Cheese Spread is marketed
under the name of "Amul Cheese Spread". "Sugam" Paneer is also prepared and packed in 200g packet in air-tight container. All these products have "Sugam" brand-name. In addition Cheese Spread is also manufactured in this plant under the name of "Amul". Sugam Unit is also exporting products under amul branch to USA, Singapore and middle east co.

Welfare Facilities:

Baroda dairy aims at maximum development of its employees & society, as a whole Baroda Dairy is not profit oriented organisation. The union provides many facilities to its employees. It is also having welfare officer who is concerned with the matters of statutory & non-statutory welfare provision which are under Factory act – 1948.

The following are the some benefits given by Baroda dairy to its employees.

- Uniform
- Canteen
- Safety Measures & Suggestions
- Insurance Schemes
- Medical help

Total Units:

1. Baroda Dairy, Baroda
2. Sugam Dairy Unit, Baroda
3. Cattle Feed Factory, Itola
4. Milk Chilling Centre, Baroda
5. Vetenary Sub-unit, Saveli
6. Vetenary Sub-unit, Dabhoi
<table>
<thead>
<tr>
<th>Unit Size</th>
<th>Large scale operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Products of Baroda Dairy</td>
<td>Milk: Sampurna, Standard, Sphurti, Slim &amp; Trim Butter, Goras, Jeera Chhaas, Butter, Flavored milk, Ghee, Rajvadi Kadhi</td>
</tr>
<tr>
<td>Products of Sugam Unit</td>
<td>Ice-cream, Paneer, Shrikhand, Sweets, Dahi, Matho, Cheese</td>
</tr>
</tbody>
</table>

**Input Programmes:**

Taking a look at the need of the farmers, the union offered some input programmes like Veterinary Services and Artificial Insemination Services in 1968. At the village level, First Aid and A.I. are carried out by trained inseminators. Union Veterinarians supervise the A.I. and Veterinary First Aid Programme. The secretaries and the milk testers of the primary milk co-operatives are being trained on a day-to-day basis at the milk co-operatives. The unions veterinarian attend nearly 80,000 emergency cases of sick animals every years.

**Cattle feed production and straw treatment with urea:**

As the economy of milk production relies on economic feeding of milk cattle, a cattle feed plant of 100 MT capacity has been established by this union at the village Itola in the year 1980. The balanced cattle feed is being utilised by farmers in increasing quantity, year by year. There by capacity utilisation of the cattle feed plant is increasing every year. large-scale demonstrations of impregnating paddy straw with urea has led farmers in adopting this technology for economic feeding of their milch cattle. Expenditure for demonstration is borne by NDDB and the Milk Union.

We produce cattle feed and by – pass protein feed in our modern cattle feed plant at Itola. We have made arrangement to supply high quality balanced nutritive cattle feed at affordable price to our milk producers. This feed increases immunity against disease in animals. During the year in spite of unbearable rise in price of raw materials like grain, cereals, oil seeds, molasses and transportation too, union has supplied 21,301 MT Baroda Dan and 2309 MT by-pass protein feed at low price to
milk producers. Total 23,610 MT cattle feed supplied on demand to DCS. We have made loss in cattle feed factory due to low sale price of cattle feed rather than production price. We have kept low price of our cattle feed compare to other milk unions. It has come to notice that some of DCS in district sale inferior quality cattle feed of private companies. It is a serious matter. Such type of inferior quality cattle feed is harmful to health of animals and milk production due to lack of nutritious elements.

**Fodder development scheme :**

There is overall dearth in availability of fodder which leads to low production for animals. The requirement of food for fuel purpose is also adding to the shortage of fodder due to intensive cutting of trees. In order to overcome this burning problem, the scheme of Kisanvan for individual farmer and Gramvan for DCS has come in existence. A farmer who cultivates fodder cum fuel tree and fodder/grass in one Hectare of land is eligible for an amount of Rs.2,500/- over a period 3 years as a subsidy. Under this project, small farmers are benefited. The milk union has also implemented the Silvipasture scheme in 10 hectares of land near milk chilling centre, Bodeli. Over and above various types of fodder seeds are supplied to the farmers for cultivation of good quality green fodder. The Union has undertaken fodder seed cultivation programme to meet the demand of quality fodder seed for the farmers. this programme is implemented very successfully as a result fodder seed processing plant is sanctioned to Baroda Dairy Milk Union by NDDB under Operation Flood III programme.

**Smokeless chula & biogas plant :**

To overcome the acute shortage of fuel wood and for better utilisation of energy this scheme has come into existence. There is also protection of likely damage of eyes of the cooking persons, i.e. ladies. In view of the contact of the contact of rural public through DCS, the milk union has involvement in this work. Last year, 460 number of smokeless chullas were prepared under this project. Also the Milk Union has started biogas plant construction and supervision work at DCS level.
Group insurance coverage of CB cows:

Group insurance coverage is also given to the numbers of cross bred cows wherein the rate of premium is 3.4%. Nearly 1,380 CB cows are covered in 1991-92.

Group insurance scheme:

Union has implemented “Janshree Bima Yojna” for members of DCS and “Group cattle insurance” scheme for members’ milch animals. Janshree Bima Yojna is extended to 6278 members of 188 DCS where in Rs. 38,25,000/- of insurance claim has been paid to nominee of deceased against the death of 265 members.

Cluster A.I. centre concept & progeny testing (Dipa) programme:

This union is pioneer in Gujarat Dairy Federation to implement cluster AI concept in the Co-operative Sector. The idea of this is to provide economized and speedy AI service for the farmers milch animals at their door-step. At present, 42 centres are operated under this project covering 79 DCS. For scientific evaluation of breeding bulls and more milk yield per buffalo/cow, DIPA Programme is implemented in the milkshed. As a result of this programme farmers have become more conscious in animal rearing on scientific basis.

Provision of exotic bulls for natural service (nmh scheme):

This scheme was sponsored by NDDB in our union in the year 1987. Under this scheme we supply exotic proven bulls for natural service to enhance intensive cross breeding programme in the DCS situated at the interior part of district where A.I. facilities are not available due to operational problems and also lack of adequate knowledge on the farmer members.

Cross bred male calf rearing project:

The cross breeding programme for upgrading the indigenous livestock was started under Operation Flood Programme. However, with the increasing number of crossbred female calves sufficient number of bulls of good pedigree are not available, since there was no such project for rearing bull calf in existence. This milk union has started a CB male calf rearing project at Itola based male calf rearing centre which is
first of its kind in India. Under this project 100 CB male calves are to be reared. Young male calves of known and renowned pedigree are purchased from reliable institutions in the country and the matured male animals are to be disposed to co-operatives and other institutions connected with animal breeding programme.

**Animal husbandry and animal breeding :**

Animal health treatment of sick animal is very important. The milk union is firmed to do it through its main veterinary service centre at Baroda, with 4 sub-centres and 6 micro centres. Veterinaries are facilitated with mobile phones for faster communication with union to provide emergency veterinary service.

**Animal nutrition activity :**

In the business of animal husbandry members’ animal should get good quality fodder, and members should get affordable price on produced fodder seeds. Therefore under intensive fodder seed production programme union has sown good quality seeds of different variety such as Jowar PC-6, PC-9, PC-23, HC-136, HC-171, Panchkari-5-6, Sweet Sudan 59/3 Rajkot Anand-2, RL-88, T-9, KO1, African Toll Makai, Oat cant, Bajara RBC-2 and Choli-EC-4216 in 400 acres of land.

In this programme 358.0 quintals of seed production has been done. 830 kgs of Gajraj fodder sapling are distributed to members. Feeding of chaffed fodder to animals has reduced wastage and increased digestibility. The fodder is valuable, so it is necessary to implement this to reduce cost of milk production. The union has distributed 74 hand chaff cutter and 30 Electric chaff cutter to members on “No profit No Loss” basis. Total 271 chaff cutter and 189 Electric chaff cutters are distributed till today. I am assured this will make our animal husbandry business profitable.

**Community development service :**

**Dairy road project**

The union had earlier prepared one project on approach roads linking the milk collection centre of the village to the main road by asphalt road. The project is to be operate with the road project of District Panchayat of Baroda. So far, the union has
contributed Rs.10,00,000/- for this project to make an asphalt road of 20 kms. length connecting milk collection centres of various villages to the main road.

**Women education programme**

The farmer's wife play an important role in milk production business, hence the rural women are given education on animal management and milk production through ladies seminars and discussions at the village level. Special type of workshop on dairy husbandry is also being held at the village level by the lady instructors. Film shows at the village level wherein films on the subjects of AH, Fodder Production and Animal health etc. are arranged in conjunction with this training programme.

**Co-operative development programme**

The ladies members play a pivotal in the development of milk co-operatives since they are at the base of AH activities, the education and training of Lady farmers brings noticeable improvement in the functioning of the primary milk cooperatives and also improvement in Animal Management Practice and hygienic milk production. Considering the aforesaid facts and as per the guidelines of NDDB the CDP has been implemented in the district. So far 1,1354 No. of ladies and 10,557 No. of gent members of 239 No. of DCS have been trained under this programme. This programme also covers training of managing committee members, secretaries and orientation of DCS chairmen, bringing thereby overall improvement in the working of DCS.

**Publishing of educational bulletin**

The entire farmers' education programme is centered around the hygienical production of milk. Since the initial quality of raw milk received at the dairy dock is responsible for final ourage level in the milk, more emphasis is given on hygiene at every stage and the importance of clean milk production is stressed upon the farmers. Various types of literature in the form of pamphlets is distributed in farmers' meetings and the extension bulletin "SHWET KRANTI" is being published for the purpose related to the science of milk.
**Incentive for visiting of dairies**

In order to educate the farmers on various activities of the parent milk union and other milk co-operatives in the state, the primary society is encouraged to organise visits of its members to the dairy plant, cattle feed factory leading primary milk co-operative and dairy plants of other milk unions. This type of educational tour gives clear ideas regarding the latest development of dairying. For this educational tour programme, union gives reimbursement in the transport expenditure incurred by the primary co-operative for to & fro journey of the farmer members.

**Rural sanitation programme**

Cleanliness and sanitation is the first and fundamental requirement for clean milk production. In order to educate the farmers on this aspect the milk union has taken up "UNICEF" aided rural sanitation programme under which different aspects of Hygiene & Sanitation are taught and facilities for improving Hygienic condition in the rural dwellers like construction of latrines, soak pits, etc. is undertaken by the motivators and masons specially trained by the milk unions for this purpose. An annual expenditure worth Rs.4 lacs is incurred by the union.

**Construction of milk collection centres**

The union offers some contribution for the construction of milk collection centres. Interest free loans repayable in five years are given. Electronic machines for milk testing are supplied to societies having more than 200 LPD milk and Automatic Milk Collection Stations are installed at DCS level having more than 500 litres of milk per day.

**Tribal welfare project**

The milk union and Govt. of Gujarat is tying to uplift the life standard of milk producers through development of milk business in tribal areas. During the year for development of milk producers, we have helped DCS by giving subsidy of Rs. 40.86 lakhs, received by project administrator tribal sub plan, Chhota Udaipur under Gujarat pattern and nucleolus budget to purchase MTM, AMCS Electronic weighing machines electronic siren, Generators, Inverter batteries Dudhsagar assistance, Milch
Cow- Buffalo purchase and equipment. Tribal members are highly motivated by such Govt. sponsors projects, successfully implemented by milk union, and they have been taking keen interest in milk production business.

**Various education programme:**

In the continuous changing circumstances, union has implemented varied educational and training programme for DCS members to exchange their experience and to acquaint them with latest business related information. Active participation by members is must for effective leadership in cooperative milk business. This will give opportunity to youth generation for self employment and strengthen economy of rural life.

Union has implemented ICD programme under which societies, cleanliness module have shown remarkable improvement in cleanliness standard as well as quality of milk due to positive attitude for cleanliness shown by DCS, Union has celebrated “Red Tag Day” on 2nd October, in which total 454 DCS have participated. Union has organized “Dudh Mandali Vikas Yatra” programme in 56 DCS during this year. In this programme till today 358 DCS members have actively participated and chartered their business plan for the forth coming five years. To know the benefits of this programme union has organized annual review meeting in 103 DCS.

GCMMF has organized orientation programme for Chairman and Secretaries of DCS under which 50 DCS, during the year with total 768 DCS have participated.

**Total Quality Management (TQM):**

Union has implemented “Total Quality Management Programme” with active participation of employees under which critical problems in routine work are evaluated and resolved. Besides this, union is conducting regularly house keeping audit under house keeping activity. This has resulted in maintenance of cleanliness in the union.

Union has got certificate of appreciation fro continuous 10 lakhs working human hours without accident at the Gujarat State Safety Award competition organized by Gujarat Safety Council and Gujarat State Factory Inspectorate among drug, Pharmaceuticals, Food and dairy Industries fro the year 2005.
Union has given training for different technical fields to 107 employees during the year. Besides this Union’s employees and affiliated contractors are trained for ISO 9001-2000 and ISO-14001 as per policy declaration.

**SUGAM UNIT**

In today’s competitive market, based on quality the “SUGAM BRAND” product has established “The taste you ever trust” image on consumer’s mind. It has continuously maintained consumers’ satisfaction and made available different milk products to districts consumers since 15 years.
GENERAL INFORMATION OF SUMUL DAIRY

Name of the Dairy : Surat District Co-operative Milk Producer’s Union Ltd.
Address of Dairy : Post Box No. 501, SUMUL Dairy Road, Gujarat, India.
Contact : 0261 - 2533572
Email : bdb@sumul.coop
Website : www.sumul.com
Year of Establishment : 1968
Type of ownership : Co-operative Organisation
Working Shift : Three shifts
Products of Dairy : Milk, Milk products, Srikhand, Sweets

History of SUMUL :

SUMU or “Surat Milk Union Limited”, which is now renamed as The Surat District Co-operative Milk Union Ltd, is one among the 12 district unions which acts as manufacturing units of dairy products for Gujarat Co-operative Milk Marketing Federation Limited, the marketers of Amul and Dhara brand of products.

Surat District has been a Pioneer in India in channeling trade in Cotton and Milk through co-operatives. Before SUMUL stepped in, traditional Private Milk Traders were dominant in the area.
The private trade was monopolizing the Milk market and exploiting both the Milk Producers and Consumers alike. The milk procurement price which used to be fixed by the traders (traditional Bhatias) was very low and was fluctuating from time to time at their sole discretion. These has capitalized on the absence of any infrastructure and processing facilities and has managed to keep producers from deriving equitable benefits from the marketable surplus generated. As such their income from milk was very low and they had no incentive for modern dairy farming. The farmers resented the system, but were helpless in the face of these traditional constraints and to their own lack of resourcelessness.

Dairying on the other hand, was never popular with tribal's (a major rural population in the District) as practically no infrastructure existed for milk marketing in their talukas, inaccessibility to their villages as well as taboos regarding keeping of buffaloes prevented the entire population of tribal's from considering dairying as a source of income. The tribal's kept their cows to produce bullocks rather than milk, which was insufficient even to nurse the calves. Most of the tribal's were unaware of the usual milch breeds, what to say of Scientific Animal Husbandry?

Hygienic and pure milk was almost unknown in the market. In fact unbridled adulteration of milk was practiced by these traders to meet the growing demand of milk in the city. To salvage the poor producers from the clutches of these Private Traders, Organisation and integration of procurement, processing and marketing of milk and milk products by the producers themselves on a sound co. operative line was essential; this would also ensure elimination of middlemen, equitable distribution of benefits to Rural Milk Producers and indirectly to urban milk consumers as well.

Hence, the Surat District Co. operative Milk Producers' Union Ltd., SUMUL is trade name and literally meaning sound price, came into existence on August 22, 1951.

**Objective of SUMUL :**

- To provide year round milk market for their surplus milk and to earn reasonable returns for the milk to improve their quality of life.
To procure milk and process it into good quality milk and milk products to market it at most economically and efficiently to give maximum overall net returns to the producers and general satisfaction to the consumers.

To provide essential technical inputs and services to the producers at their door steps in an economic and efficient manner and also in a way most acceptable to them to increase milk production and to reduce the cost of production.

Vision:

SUMUL's Vision Statement: "WE ARE SOCIALLY RESPONSIBLE ORGANISATION WITH COMMITMENT TO CONSUMER DELIGHT AND RESPECT FOR ALL. WE BELIEVE IN GROWTH AND CONTINUOUS IMPROVEMENT THROUGH TEAMWORK, TRUST & EXCELLENCE, WITHOUT COMPROMISING OUR HONESTY AND INTEGRITY".

<table>
<thead>
<tr>
<th>Year</th>
<th>2006-07</th>
<th>2009-20</th>
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<tbody>
<tr>
<td>Turnover</td>
<td>RS. 607 Crores</td>
<td>RS. 4000 Crores</td>
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<tr>
<td>Milk Procurement</td>
<td>6,59,682 kg/day</td>
<td>14,10,000 kg/day</td>
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<tr>
<td>Milk Sale</td>
<td>595,595 Liters/Per day</td>
<td>13,00,000 Liters/Per day</td>
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<tr>
<td>Quality</td>
<td>ISO 9001 &amp; HACCP</td>
<td>ISO 22000 &amp; ISO 14001</td>
</tr>
<tr>
<td>Production cost</td>
<td>Minimum Production</td>
<td>MPC through 100% automation</td>
</tr>
<tr>
<td>Unit</td>
<td>Place</td>
<td>Capacity</td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------------------</td>
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<tr>
<td>SUMUL DAIRY</td>
<td>Surat</td>
<td>5 Lakh LTPD</td>
</tr>
<tr>
<td>Uchchhal Chilling Centre</td>
<td>Uchchhal (U.C.C.)</td>
<td>1 Lakh LTPD</td>
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<tr>
<td>Bajipura Chilling Centre</td>
<td>Bajipura (B.C.C.)</td>
<td>3 Lakh LTPD</td>
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<td>Sumuldan Factory</td>
<td>Chalthan (S.D.F.)</td>
<td>200 MT PD</td>
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<td>Nasik Plant</td>
<td>Nasik</td>
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<tr>
<td>Nizer Chilling Centre</td>
<td>Nizer</td>
<td>63,000 LTPD</td>
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Consumers oriented, Cost Effective Distribution, Cost Effective Vertical & Horizontal Distribution
## Awards:

<table>
<thead>
<tr>
<th>Award / Medal</th>
<th>Award Title</th>
<th>Year</th>
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<tbody>
<tr>
<td>[Image]</td>
<td>National Energy Conservation Award (More Detail)</td>
<td>2007-08</td>
<td>Ministry of Energy Government of India</td>
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<tr>
<td>[Image]</td>
<td>National Productivity Award (more detail)[<a href="http://sumul.com/about_awards.html">http://sumul.com/about_awards.html</a> - #]</td>
<td>2007</td>
<td>Ministry of Agriculture</td>
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<tr>
<td>Award</td>
<td>Year</td>
<td>Organization</td>
<td></td>
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<tr>
<td>----------------------------------------------------------------------</td>
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<td>------------------------------------------------------------------------------</td>
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<tr>
<td>&quot;Excellence in Service&quot; Award (more detail) [<a href="http://sumul.com/about_awards.html">http://sumul.com/about_awards.html</a> - #]</td>
<td>2007</td>
<td>South Gujarat Hotel And Restaurant Association</td>
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<tr>
<td>National Energy Conservation Award (more detail [English / Gujarati] )</td>
<td>2007</td>
<td>Ministry of Energy Government of India</td>
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<td>National Dairy Product Judging Contest Certificate (more detail) [<a href="http://sumul.com/about_awards.html">http://sumul.com/about_awards.html</a> - #]</td>
<td>2006</td>
<td>Alumna association and college of dairy science</td>
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<td>Gram Vikas Award (more detail) [<a href="http://sumul.com/about_awards.html">http://sumul.com/about_awards.html</a> - #]</td>
<td>2006</td>
<td>Federation of Indian Chambers of Commerce &amp; Industries</td>
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<td>National Energy Conversation Award (more detail)</td>
<td>2006</td>
<td>Ministry of Energy Government of India</td>
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<td>Golden Peacock Award (more detail)</td>
<td>2006</td>
<td>Institute of Director (International Institute)</td>
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<tr>
<td>Manthan-AIF Award</td>
<td>2006</td>
<td>Online Integrated Computerized Systems</td>
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</tbody>
</table>
International Management Systems:

When Central Govt. declared its liberalization policy in 1991, dairy co-operative sector also opened to all. To meet the global challenges, Sumul started the process of implementing Total Quality Management System (TQM) in the year 1996 for overall organizational improvement and to be more cost effective under the guidance of Eicher Consultancy. All the employee of the organization were trained on the three basic principles of TQM i.e. Total Employee Involvement, Total Waste Elimination and Total Quality Control. As a result small improvements in cost saving and quality improvement start taking place with active involvement of employee in ‘KAIZEN’, ‘QUALITY CIRCLES’ AND ‘SMALL GROUP ACTIVITY’.
In continuation with TQM, Sumul felt the need of implementing ‘Total Productive Maintenance’ (TPM) in order to improve productivity and enhance quality. TPM implementation started in the year 1999 and the journey continued till 2002.

**Organisation Structure:**

```
Board of Directors

Managing Director

General Manager

Assistant General Manager

Manager

Dy. Manager / Assistant Manager

Executive Officer / Sr. Exe. Officer

SR / JR. Assistant

Skilled / Unskilled Work Man
```
Sumul being a customer focused organization, marched a step further and in the year 2000 Sumul framed ‘Quality Policy’ and documented and implemented ‘Quality Management System’ and HACCP i.e. food safety principles and got certified for international standards ISO 9002: 1994 and HACCP by ‘Quality Assurance Services’ (QAS) associated with JAS-ANZ an Australia based certification body accredited by International Accreditation Forum. The motto behind this was to supply good and safe quality of milk and milk products consistently.

Sumul believes in continual improvement and go ahead for upgradation of the Quality Management System along with HACCP in line with the up graded international standard i.e. ISO 9001:2000 and certified for the same standard in the year 2002.

Gujarat Co-operative Milk Marketing Federation Limited, Anand (GCMMFL) is a marketing body engaged in export of milk products manufactured by member dairies of GCMMFL where Sumul Dairy is one of them. Export of Milk products requires stringent quality control & Inspection norms as per international standards. Sumul Dairy is approved by Export Inspection Council of India to export products of international quality standards.

Continual Improvement – The Journey continues to satisfy our esteemed customers.
Automatic Milk Collection Station :

With the decent aim of procuring fresh and clean milk at the society level along with enhancing self-assurance while getting slip showing milk fat, SNF, quantity and price of milk supplied by member during milk collection, Automatic Milk Collection Stations are installed at milk societies. A software package for entire accounting procedure of the society having modern facility has been incorporated therein. To facilitate run Automatic Milk Collection Station continuously where constant electricity supply is not available, solar-energy operated systems have been arranged in such 52 milk societies.

Bulk Chilling Unit :

To make milk and milk products as per international standards, milk having high quality need be procured right from the village level; so Union has commenced Milk Chilling Units having different capacities to facilitate chilling at the place of production, which has helped improve quality of milk; and, milk of two three times can be brought by single trip as per suitability of time, and also society can collect milk at their desired time and preserve milk by chilling.

‘Milk House’ Aid :

In our dairy business, milk production and procurement starts from the village society, and, for which society need to have its own Milk House which supports the facilities of members and develop a sense of self reliance. Keeping this matter in focus, Union has made arrangement to extend special aid to societies which are willing to raise Milk House with their own funds; thus 76 societies of the district have made their own Milk House which is highly praiseworthy.
GENERAL INFORMATION OF MOTHER DAIRY

Name of the Dairy : Mother Dairy
Address of Dairy : Plot 35, P.O.Bhat, A’bad Gandhiagar Highway, Gujarat, India.
Contact : 079-23969059
Website : www.amul.com
Year of Establishment : 1994
Type of ownership : Unit of GCMMF
Working Shift : Five shifts
Products of Dairy : Liquid milk, Icecream, UHT, Ghee, Curd, Lassi, Pizza, etc.

History of MOTHER Dairy :

Mother Dairy is a unit of Gujarat Co-operative Milk Marketing Federation Ltd., having Asia's largest fully automated Milk and Milk product manufacturing facilities spread in more than 70 acres of land, with thousand crore sales turn over, popularly known for the brands of "Mother Dairy", "Amul and "Sagar". We are looking for a hard working professional with excellent track record for the following positions.

“Mother dairy is basically a concept and if any of the cooperative member dairies have surplus milk, then it is sent to mother dairy. These mother dairies were set up to help rural hinterland milk cooperatives and this is how mother dairy of Delhi, Chennai, Hyderabad, Kolkata, one near Ahmedabad and others have come up across...
India. All the mother dairies, except the one in Delhi, were transferred to respective cooperatives across the country,” notes a senior official in GCMMF.

Indeed, the Mother Dairy at Koba, near Ahmedabad, is owned by the federation.

Both sides were in a protracted legal battle though, after the exit of Verghese Kurien from the cooperative sector, both the board and GCMMF have kept a low profile on this issue. When Kurien was at the helm of GCMMF, he opposed selling of dairy products under the Mother Dairy brand and resisted any competition between these two brands as he thought it would hurt the interests of farmers and milk producers.

NDDB and its chairperson Amrita Patel, a former protege of Kurien, however, were of the opinion that cooperatives must compete like any other professional bodies. However, Kurien was later eased out in 2006 by dairy members of GCMMF with what was seen as tacit support of Patel. After Kurien’s exit from GCMMF, its relations with NDDB have improved and officials of both the entities are no longer willing to talk about the legal status of the brand.

Thachil insists that Mother Dairy will try to increase its share through marketing and distribution and not target any specific brand. “The objective is to leverage the Mother Dairy brand equity,” he says.

GCMMF officials, however, say the arrival of NDDB’s Mother Dairy will create confusion in the minds of customers in Ahmedabad as Mother Dairy Gandhinagar is owned by GCMMF and is widely known in the region.

“IT would create a confusion but we will deal with the situation,” says a senior GCMMF official who does not wish to be named, adding that the federation is ready to match NDDB’s marketing muscle.

NDDB had led a big marketing push in Ahmedabad for the launch of Sugam brand, advertising heavily in local and outdoor media.

It also tried to lure Amul milk distributors by offering them higher commission. However, that was quickly matched by Amul and Sugam failed to make any meaningful inroads into Amul’s territory.
NDDB buys milk for its Ahmedabad and Saurashtra market from the Junagadh dairy in Saurashtra. It collects at least 100,000 litres every day from milk producers in Junagadh and surrounding districts of Saurashtra.

Mother Dairy products are available throughout India except for a few states such as Tamil Nadu and Kerala. Its product portfolio includes milk, butter, ghee, cheese, flavoured drinks, probiotic yogurt and ice creams.

“We are constantly evaluating market opportunities for various categories and we would certainly be present across most of them across all states of the country over the next few years,” predicts Thachil.

The concept of Mother Dairy had been given by the renowned and highly visionary Dr. Varghese Kurien. He has laid down the foundation of Mother Dairy. The operation of Mother Dairy is been in the hands of GCMMF. (Gujarat Co-operative Milk Marketing Federation). It was decided by the 14 union members of GCMMF to supply the surplus milk to Mother dairy. As such Mother dairy does not have its own existence, that is, it merely produces milk products and others as per the order received by GCMMF and the availability of milk from the 14 union members of GCMMF. The 14 union members of GCMMF i.e.: AMUL Dairy, Banas Dairy, Dudhsagar Dairy, SUMUL Dairy, Baroda Dairy, etc.

GROWTH FOLLOWS GROTH

India’s modern dairy sector has expanded rapidly. From an insignificant 200,000 litres per day (lpd) of milk being processed in 1951, the organized sector is presently handling some 20 million lpd in over 400 dairy plants. Already, one of the world’s largest liquid milk plants is located in Delhi, handling over 800,000 litres of milk per day (Mother Dairy, Delhi). India’s first automated dairy (capacity: 1 million lpd) Mother Dairy, Gandhinagar -- has been established at Gandhinagar near Ahmedabad, Gujarat, in Western India. It is owned by India’s biggest dairy cooperative group, Gujarat Cooperative Milk Marketing Federation (GCMMF) in Anand, with an annual turnover in excess of Rs 23 billion (US $500 million). Amul-III with its satellite dairies, with total installed capacity of 1.5 million lpd has also been commissioned.
India's first vertical dairy (capacity: 400,000 lpd), owned by the Pradeshik Cooperative Dairy Federation (PCDF) has been commissioned at Noida.

**The Winning Edge**

Three aspects of India’s modern dairy sector are particularly noteworthy.

- A vast market for dairy products is being built as disposable incomes increase. Its focus is the increasingly affluent middle class, numbering some 300 million — almost the population of the United States — which is confined to well-defined urban pockets and is easily accessible. Milk occupies pride of place as the most coveted food in the Indian diet, after wheat and rice. Milk-based sweets are a culinary delight in all homes throughout the year.

- The milk production is pre-dominantly rooted in the cooperative system. Its focus is on the small rural farmer having one or two cows/buffaloes, yielding 2-3 litres of milk per animal. This system is the basis of Operation Flood, the world’s largest dairy development program.

- The preferred dairy animal is the buffalo. Some 65 per cent of the world buffalo milk is produced in India.

  It has 30 per cent higher total solids compared to cow milk — an average of 16% vs. 12% for cow milk.

  Valued for its high fat content (7% vs. 3.5%), it is also high in calcium, phosphorus, lactose and proteins.

  Buffalo milk is the delight of the milk processor for its more profitable handling.
Upgrading dairy technology:

A sneak-peak into energy-efficient drive technology and comprehensive automation solutions at Mother Dairy, Gandhinagar.

To keep abreast of current market trends, Gandhinagar’s Mother Dairy decided to realise the fully automated powder plant. The dairy deployed Siemens’ completely integrated automation and electrical solutions and innovative upgraded program involving some of the most advanced process and production control technology available in the food processing industry.

A sneak-peak into energy-efficient drive technology and comprehensive automation solutions at Mother Dairy, Gandhinagar

The Mother Dairy plant in Gandhinagar has the capacity to process 1.7 million litres of milk per day. Approximately 0.8 million litres are packaged as pouch milk; 0.7 million litres are processed in the milk powder plant, which has a capacity of 60 tonne per day; and 0.2 million litres are destined for aseptic packaging in cartons. Liquid milk fats are used to produce cream oil. The dairy also produces 40 tonne of butter oil and 0.14 million litres of ice cream. Fermented products, whey drinks, mozzarella cheese, and pizza complete the product spectrum. Milk powder is one of the fastest-growing market segments, so some years ago, Mother Dairy decided to build another milk powder plant with a capacity of 100 ton per day. This plant is unique in Asia due to its size and high degree of automation.

State-of-the-art technology

Mother Dairy wanted to equip its state-of-the-art greenfield project with the latest process control, drive, and switchgear technology to maintain its technological and economic lead in India’s dairy products industry.

The major issue was energy efficiency in order to optimise operational costs. The dairy also wanted to implement an integrated plant automation, instrumentation, and electrical solution that would enable uniform control and optimisation of all processes. One focus in this context was process instrumentation integration, as the plant operators wanted to calibrate and monitor the process instrumentation
parameters from the central control room. That way, the staff of the existing milk powder production facility would be able to run the new, larger capacity plant. Consequently, the dairy opted for a comprehensive plant automation concept, including process instruments, remote I/O devices, electrical systems, and automation and drive technology.

All remote devices were to be integrated with the process control system via bus technology, using Profibus DP and PA as well as AS-Interface for networking the process instruments and remote devices. After comparing the Totally Integrated Automation (TIA) approach suggested by Siemens with other solutions, Mother Dairy chose Siemens because the company was convinced that the Simatic PCS7 process control system could provide seamless integration with the existing plant network and all other third-party devices, including electrical equipment right down to the field level, thus enabling the comprehensive solution that the dairy required.

**Integrated solutions**

Siemens began working on this project from the concept stage of the powder plant and provided a complete functional design specification involving the linking of automation with high-voltage and low-voltage electrical equipment via Profibus DP. Variable frequency drives linked with Profibus, were suggested for fans and blowers. This approach netted substantial energy savings.

For the first time in a dairy environment in India, the pumps were equipped with smart motor control centres (MCCs) with Simocode systems and connected to the plant-wide Profibus network, enabling control and monitoring of all pumps from the central control room. The plant is also equipped with Siemens switchgear technology on Profibus. The order also encompassed engineering design, software development, equipment supply, and system commissioning. The smart MCCs prevent the pumps from running dry, which reduce maintenance and downtime. The plant automation solution also offers an integrated energy management system that helps plant personnel monitor the energy consumption in individual sections. Energy consumption for any shift can be analysed directly by the management. Since all units are on Profibus, diagnostics can now be performed from a central controller.
**Strong market position**

Multiple product operations, changes in technology, and distribution requirements have all necessitated a change in the automation concept at Mother Dairy, Gandhinagar. With TIA, Siemens has been able to provide the dairy with the technological edge needed to keep the company ahead of the competition in the Asian dairy products and milk powder market.

The National Dairy Development Board’s (NDDB) Mother Dairy brand will enter the Rs600 crore annual Ahmedabad milk market in January in what will be a head-on clash with incumbent Amul from the Gujarat Cooperative Milk Marketing Federation (GCMMF).

Both GCMMF and NDDB have been fighting over the Mother Dairy brand with the former contending that Mother Dairy is merely a concept while the latter claims ownership of the brand.

NDDB got Mother Dairy registered in New Delhi while the federation’s Mother Dairy brand is registered in Gandhinagar, capital of Gujarat.

According to Paul Thachil, chief executive officer, Mother Dairy India Ltd, the company’s Sugam brand, sold as milk pouches in Saurashtra and Ahmedabad, will now be replaced by Mother Dairy.

**Expansion plans**

A Mother Dairy van in front of an outlet in New Delhi. The brand is present in most states in India. (Madhu Kapparath/Mint). Mother Dairy India is a subsidiary of NDDB, an entity created to promote, finance and support producer-owned and controlled organizations in the cooperative sector and strengthen farmer and dairy cooperatives. It has 117,575 village cooperatives under its fold and procures more than 21.5 million litres of milk from across the country daily. This will be the first Mother Dairy milk offering in Gujarat where it sells butter, cheese and ghee in Saurashtra, Ahmedabad, Anand and Baroda.
Amul controls more than 85% of the organized milk market of Ahmedabad, selling 600,000-650,000 litres of milk every day. It is followed by the Ahmedabad District Cooperative Milk Producers Union Ltd-owned Uttam brand. Uttam sells around 75,000 litres of milk per day in Ahmedabad. Other private sector players include Gayatri, Shresth, Anmol and Gamdiwala.

**GCMMF: An Overview**

Gujarat Cooperative Milk Marketing Federation (GCMMF) is India's largest food products marketing organisation. It is a state level apex body of milk cooperatives in Gujarat which aims to provide remunerative returns to the farmers and also serve the interest of consumers by providing quality products which are good value for money.

**Setting Up of Gujarat Cooperative Milk Marketing Federation**

In 1954, Kaira District Co-operative Milk Producers’ Union built a plant to convert surplus milk produced in the cold seasons into milk powder and butter. In 1958, a plant to manufacture cheese and one to produce baby food were added. Subsequent years saw the addition of more plants to produce different products. In 1973, the milk societies/district level unions decided to set up a marketing agency to market their products. This agency was the Gujarat Cooperative Milk Marketing Federation (GCMMF). It was registered as a co-operative society on 9 July 1973.

**GCMMF Today**

GCMMF is India's largest food products marketing organisation. It is a state level apex body of milk cooperatives in Gujarat, which aims to provide remunerative returns to the farmers and also serve the interest of consumers by providing quality products, which are good value for money. GCMMF markets and manages the Amul brand. From mid-1990's Amul has entered areas not related directly to its core business. Its entry into ice cream was regarded as successful due to the large market share it was able to capture within a short period of time - primarily due to the price differential and the brand name. It also entered the Pizza business, where the base and the recipes were made available to restaurant owners who could price it as low as 30 rupees per pizza when the other players were charging upwards of 100 rupees.
In September 2007, Amul emerged as the leading Indian brand according to a survey by Synovate to find out Asia's top 1000 Brands.

**GCMMF crosses Rs 67 billion sales turnover**

Gujarat Co-operative Milk Marketing Federation (GCMMF), popular for its brand Amul, has registered a quantum growth of 28 per cent to reach a record turnover of Rs 67.05 billion during the financial year 2008-09, an increase of nearly Rs 14.5 billion in absolute terms over the previous year, according to a company pressrelease.

During the period, GCMMF's turnover has almost doubled in last three years. It is also noteworthy that the unduplicated Group turnover of GCMMF and its 13 dairy cooperatives has touched Rs 100 billion. GCMMF's growth has come from all its major products as well as from all geographical regions of the nation. The milk procurement of GCMMF grew by 15 per cent reaching a peak of 110 lakh liters a day during last winter. BM Vyas, MD, GCMMF, said, "This impressive growth in milk procurement is attributed to the remunerative prices being paid out to the farmers consistently year after year."

The Federation plans to continue its stride and march ahead with a target turnover of Rs 80 billion for the coming year, added the release.

**List of Products Marketed:**

**Breadspreads:**

- Amul Butter
- Amul Lite Low Fat Breadspread
- Amul Cooking Butter

**Cheese Range:**

- Amul Pasteurized Processed Cheddar Cheese
- Amul Processed Cheese Spread
- Amul Pizza (Mozarella) Cheese
- Amul Shredded Pizza Cheese
- Amul Emmental Cheese
- Amul Gouda Cheese
- Amul Malai Paneer (cottage cheese)
- Utterly Delicious Pizza

**Mithaee Range (Ethnic sweets):**

- Amul Shrikhand (Mango, Saffron, Almond Pistachio, Cardamom)
- Amul Amrakhand
- Amul Mithaee Gulabjamuns
- Amul Mithaee Gulabjamun Mix
- Amul Mithaee Kulfi Mix
- Avsar Ladoos

**UHT Milk Range:**

- Amul Shakti 3% fat Milk
- Amul Taaza 1.5% fat Milk
- Amul Gold 4.5% fat Milk
- Amul Lite Slim-n-Trim Milk 0% fat milk
- Amul Shakti Toned Milk
- Amul Fresh Cream
- Amul Snowcap Softy Mix

**Pure Ghee:**

- Amul Pure Ghee
- Sagar Pure Ghee
- Amul Cow Ghee

**Infant Milk Range:**

- Amul Infant Milk Formula 1 (0-6 months)
- Amul Infant Milk Formula 2 (6 months above)
- Amulspray Infant Milk Food
Milk Powders:

- Amul Full Cream Milk Powder
- Amulya Dairy Whitener
- Sagar Skimmed Milk Powder
- Sagar Tea and Coffee Whitener

Sweetened Condensed Milk:

- Amul Mithaimate Sweetened Condensed Milk

Fresh Milk:

- Amul Taaza Toned Milk 3% fat
- Amul Gold Full Cream Milk 6% fat
- Amul Shakti Standardised Milk 4.5% fat
- Amul Slim & Trim Double Toned Milk 1.5% fat
- Amul Saathi Skimmed Milk 0% fat
- Amul Cow Milk

Curd Products:

- Yogi Sweetened Flavoured Dahi (Dessert)
- Amul Masti Dahi (fresh curd)
- Amul Masti Spiced Butter Milk
- Amul Lassee

Amul Icecreams:

- **Royal Treat Range** (Butterscotch, Rajbhog, Malai Kulfi)
- **Nut-o-Mania Range** (Kaju Draksh, Kesar Pista Royale, Fruit Bonanza, Roasted Almond)
- **Nature's Treat** (Alphanso Mango, Fresh Litchi, Shahi Anjir, Fresh Strawberry, Black Currant, Santra Mantra, Fresh Pineapple)
- **Sundae Range** (Mango, Black Currant, Sundae Magic, Double Sundae)
• **Assorted Treat** (Chocobar, Dollies, Frostik, Ice Candies, Tricone, Chococrunch, Megabite, Cassatta)
• **Utterly Delicious** (Vanila, Strawberry, Chocolate, Chocochips, Cake Magic)

**Chocolate & Confectionery:**

• Amul Milk Chocolate
• Amul Fruit & Nut Chocolate

**Brown Beverage:**

• Nutramul Malted Milk Food

**Milk Drink:**

• Amul Kool Flavoured Milk (Mango, Strawberry, Saffron, Cardamom, Rose, Chocolate)
• Amul Kool Cafe

**Health Beverage:**

• Amul Shakti White Milk Food
### GENERAL INFORMATION OF DUDHSAGAR DAIRY

<table>
<thead>
<tr>
<th>Details</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of the Dairy</td>
<td>Mehsana District Co-operative Milk Producers' Union Ltd.</td>
</tr>
<tr>
<td>Address of the Dairy</td>
<td>Dudh Sagar Dairy, Post Box No.1, Mehsana - 384 002, Gujarat, India</td>
</tr>
<tr>
<td>Contact No.</td>
<td>02762 – 253201 - 05</td>
</tr>
<tr>
<td>Web Site</td>
<td><a href="http://www.dudhsagardairy.co.in">www.dudhsagardairy.co.in</a></td>
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<tr>
<td>Year of Establishment</td>
<td>1960</td>
</tr>
<tr>
<td>Type of ownership</td>
<td>Co-operative Organization</td>
</tr>
<tr>
<td>Working Shift</td>
<td>3 shifts</td>
</tr>
<tr>
<td>Products of Dairy</td>
<td>All milk products and milk</td>
</tr>
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</table>
Late Shri. Mansinbhai Pruthviraj Patel – (1919-1970)

A visionary step initiated 50 years ago, against all odds, with only 1125 producer members to start with, by our founder Chairman Shri. Mansinbhai Pruthviraj Patel, has grown to become Asia’s largest cooperative society, an Institution that epitomize the economic & social empowerment of about 5 LACS milk producing members.

We remain forever grateful to our Founder Chairman and are duty bound to take this movement forward in the best interest of our Producer Members.

Late Shri. Motibhai R Chaudhary – (1923-2005)

As an able Leader & Administrator, Shri. Motibhai R. Chaudhary was Chairman of our Union continuously for a period of about 34 years. He has taken the Mission forward to very high peaks of achievement. His contributions to the progress of the Union, his ideas and beliefs in simple living and high values, all continue to inspire us in our activities.

A visionary movement initiated almost 50 years ago, in Mehsana, to organize the rural milk producers to help themselves had its’ benefits in building a strong cooperative movement to pool together the resources of milk producers. We are proud to exist as a purposeful organization in the Nation building process – Enhancing the milk production capacity, self-employment and income generation to the rural farmers, enhancing the per capita availability of milk etc.

Milk is considered as a nutritious and balanced food for all age group of the population. At the same time milk as such has a very short shelf life and quickly perishable in nature. Milk produced in villages is procured by efficient means of logistics and processed to create value, varieties and extended shelf life to suit the needs of ultimate consumers. Strong interdependency between the rural and urban emerges thereby narrowing down the economic gap between the people of the Nation.

We are proud to be part of the India’s achievement as the world’s largest milk producing country continuously for a period of nine years.

As in any success stories, Dudhsagar had its’ humble beginning in the year 1960. With only 1125 producer members it has grown to become the Asia’s largest cooperative dairy with 4,79,996 milk-producing members as on 31-03-2008, among
whom 2,00,000 members are women. From 2.2 lacs kg of milk collection in the initial year of its’ existence, the milk procurement has reached 6251 lacs kg during 2007-08.

We, as cooperative organization, believe in economic empowerment of our milk-producing members to whom this organization belongs. Milk production constitutes the major source of their daily earning. They are assured of a fair price be it flush or lean season.

Our inherent strength lies in the loyalty of our members and the emotive bonds that keep blooming throughout all the periods of our existence. There has always been - Trust – Mutual help – Fellowship among all involved in the processes.

**Cooperative Principles :**

- **Voluntary and Open Membership**
  
  Cooperatives are voluntary organizations, open to all persons able to use their services and willing to accept the responsibilities of membership.

- **Democratic Member Control**
  
  Cooperatives are democratic organizations controlled by their members, who actively participate in setting policies and making decisions.

- **Members' Economic Participation**
  
  Members contribute equitably to, and democratically control, the capital of their cooperative.

- **Autonomy and Independence**
  
  Cooperatives are autonomous, self-help organizations controlled by their members.

- **Education, Training and Information**
  
  Cooperatives provide education and training for their members, elected representatives, managers, and employees so they can contribute effectively to the development of their cooperatives.
• Cooperation Among Cooperatives

• Cooperatives serve their members most effectively and strengthen the cooperative movement by working together.

• Concern for Community

• While focusing on member needs, cooperatives work for the sustainable development of their communities.

Board Of Directors:

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
<th>Position</th>
<th>Member Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shri. Chaudhary Vipulbhai Mansinhbhai</td>
<td>Chairman</td>
<td>Charada</td>
</tr>
<tr>
<td>2</td>
<td>Smt. Jalaben Khengarbhadi Desai</td>
<td>Vice Chairman</td>
<td>Palodar</td>
</tr>
<tr>
<td>3</td>
<td>Shri. Chaudhary Dineshbhai Daljibhai</td>
<td>Member</td>
<td>Motihirvani</td>
</tr>
<tr>
<td>4</td>
<td>Shri. Chaudhary Bhagvanbhai Narsangbhai</td>
<td>Member</td>
<td>Vaghvadi</td>
</tr>
<tr>
<td>5</td>
<td>Shri. Chaudhary Joitabhai Savjibhai</td>
<td>Member</td>
<td>Pamol</td>
</tr>
<tr>
<td>6</td>
<td>Shri. Chaudhary Natvarbhai Mansangbhai</td>
<td>Member</td>
<td>Chitrodipura</td>
</tr>
<tr>
<td>7</td>
<td>Shri. Rabari Karsanbhai Harjibhai</td>
<td>Member</td>
<td>Kolad</td>
</tr>
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<td>8</td>
<td>Shri. Thakor Jethaji Bhavanji</td>
<td>Member</td>
<td>Oala</td>
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<td>9</td>
<td>Shri. Thakor Virendrasinh Krishnsinh</td>
<td>Member</td>
<td>Mota Kothasana</td>
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<td>10</td>
<td>Shri. Patel Ishwarbhai Joitaram</td>
<td>Member</td>
<td>Gangot</td>
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<td>11</td>
<td>Smt. Rabari Jebarben Panchabhai</td>
<td>Member</td>
<td>Aedala</td>
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<td>12</td>
<td>Smt. Patel Chandrikaben Chandubhai</td>
<td>Member</td>
<td>Delvada</td>
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<td>13</td>
<td>Shri. Patel Jayantibhai Girdharbhai</td>
<td>Member</td>
<td>Deriya</td>
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<tr>
<td>14</td>
<td>Shri Patel Ishwarbhai Prabhudas</td>
<td>Member</td>
<td>Udalpur</td>
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<tr>
<td>15</td>
<td>Shri Gami Manubhai Bhagvanbhai</td>
<td>Member</td>
<td>Nayaka</td>
</tr>
<tr>
<td>16</td>
<td>Shri Chaudhary Veljibhai Kesharbhai</td>
<td>Member</td>
<td>Nagvasan</td>
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<tr>
<td>No.</td>
<td>Name</td>
<td>Role</td>
<td>Location</td>
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<tr>
<td>17</td>
<td>Shri. District Registrar</td>
<td>Member</td>
<td>Mehsana</td>
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<tr>
<td>18</td>
<td>Shri. R. S. Sodhi</td>
<td>Member</td>
<td>GCMMF – Anand</td>
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<tr>
<td>19</td>
<td>Shri. Y.Y.Patil</td>
<td>Member</td>
<td>Anand</td>
</tr>
<tr>
<td>20</td>
<td>Shri K.C.Verma</td>
<td>Member</td>
<td>Mehsana</td>
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</tbody>
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Structure:

![Diagram of organizational structure]

```mermaid
graph TD
    B --> C[MANAGING DIRECTOR]
    C --> D[FUNCTIONAL DIVISIONS]
    D[PRODUCTION] --> D
    D[ENGINEERING] --> D
    D[COMMERCIAL] --> D
    D[COOP SERVICES] --> D
    D[A.H & T.I] --> D
    D[H.R & A] --> D
```
Locations:

Dairy Plants

(1) Dudhsagar Dairy,
Post Box No. 1,
Mehsana – 384 002.
Gujarat State.
Telephone No: (02762) 253201
Fax: (02762) 253422

(2) Dudhmansagar Dairy
Plot No. 26-D,
Sector – 3,
Vijapur,
Gujarat State.
Telephone No: (02762) 253205

(3) Vihar SCM Plnat
Vihar,
Sector – 3,
Dist. Gandhinagar
Gujarat State.
Telephone No: (02762) 253276

Cattle Feed Plants

(1) Boriavi CF Plant
Boriavi,
Dist. Mehsana
Telephone: (02762) 282294

(2) Ubkhal CF Plant
Ubkhal,
Vijapur,
Dist. Mehsana.
Telephone: (02763) 252332.

Chilling Centres

(1) Vihar Chilling Centres,
Vijapur,
Dist. Gandhinagar,
Gujarat State.
Telephone: (02763) 252282

(2) Kheralu Chilling Centre
Kheralu,
Dist. Mehsana,
Gujarat State.
Telephone: (02761) 231012.

(3) Kadi Chilling Centre
Kadi,
Dist. Mehsana,
Gujarat State.
Telephone: (02764) 263184.

(4) Harij Chilling Centre,
Harij,
Dist. Patan,
Gujarat State.
Telephone: (02733) 222252

(5) Hansapur Chilling Centre
Hansapur,
Dist. Patan,
Gujarat State.
Telephone: (02762) 222129
Animal Health Centres

(1) Mehsana AH Centre
Highway Road,
Mehsana – 384002.
Telephone: (02762) 253201 – 05

(2) Vihar AH Centres,
Vijapur,
Dist. Gandhinagar,
Gujarat State.
Telephone: (02763) 252732

(3) Kheralu AH Centre
Kheralu,
Dist. Mehsana,
Gujarat State.
Telephone: (02761) 231046

(4) Kadi AH Centre
Kadi,
Dist. Mehsana,
Gujarat State.
Telephone: (02764) 262552

(5) Harij AH Centre,
Harij,
Dist. Patan,
Gujarat State.
Telephone: (02763) 222087

(6) Hansapur AH Centre,
Hansapur,
Dist. Patan
Gujarat State.
Telephone: (02762) 222592

(10) Sidhpur AH Centre
Market Yard
Sidhpur
Dist. Patan
Gujarat State.
Telephone (02767) 221078

(11) Vav AH Centre,
Vav VCS Building,
Vav,
Dist. Mehsana,
Gujarat State.
Telephone: (02761) 253327

(12) Akhaj AH Centre,
Akhaj VCS Building,
Akhaj,
Dist. Mehsana,
Gujarat State.
Telephone: (02762) 276611

(13) Charada AH Centre,
Charada VCS Building,
Charada,
Mansa Taluka,
Gujarat State.
Telephone: (02763) 287618

(14) Umta AH Centre,
Umta VCS Building,
Umta,
Dist. Gandhinagar,
Gujarat State.
Telephone: (02765) 289227

(15) Bapupura AH Centre,
Bapupura VCS
Bapupura,
Dist. Gandhinagar,
Gujarat State.
Telephone: (02763)
Telephone: (02764)

(17) Balva AH Centre, Balva VCS Building, Balva, Kalol Taluka, Dist. Gandhinagar, Gujarat State.
Telephone: (02765)

(18) Solaiya AH Centre, Solaiya VCS Building, Solaiya, Mansa Taluka, Dist. Gandhinagar, Gujarat State.
Telephone: (02763)

(19) Brahmanvada AH Centre, Brahmanvada VCS Building, Brahmanvada, Chanasma Taluka, Dist. Patan, Gujarat State.

(20) AH Centre, VCS Building, Dist. Mehsana, Gujarat State.


(22) Shankalpur AH Centre, Shankalpur VCS Centre, Shankalpur, Becharaji Taluka, Dist. Mehsana, Gujarat State.

(23) Vijapur AH Centre, Vegitable Market, Vijapur, Dist. Mehsana, Gujarat State.

(24) Indrapura AH Centre, NandiGhar, Mansa Taluka, Dist. Gandhinagar


(26) Unava AH Centre, Shop /Godown No: 78-B Highway, Agriculture Market yard Committee:
Unava Unjha Taluka Dist. Mehsana
Field Ai, Ptp & Frozen Semen

(1) Pashu Samvardhan Kendra,
Nr. Toll Plaza,
Ahmedabad State Highway,
P.O. Jagudan – 382710.
Telephone (02762) 285330 / 285412.
Fax: (02762) 253422.

Important Dates:

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Legal Status As A Cooperative Union</td>
<td>1960</td>
</tr>
<tr>
<td>2</td>
<td>Supply Of Milk To Ahmedabad Municipal Dairy</td>
<td>1961</td>
</tr>
<tr>
<td>3</td>
<td>Vihar Chilling Centre</td>
<td>1964</td>
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<tr>
<td>4</td>
<td>Main Dairy At Mehsana</td>
<td>1965</td>
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<tr>
<td>5</td>
<td>Kheralu Chilling Centre</td>
<td>1968</td>
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<tr>
<td>6</td>
<td>Boriavi Cattle Feed Plant</td>
<td>1969</td>
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<td>7</td>
<td>Powder Plant – N1</td>
<td>1970</td>
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<tr>
<td>8</td>
<td>Hansapur Chilling Centre</td>
<td>1973</td>
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<tr>
<td>9</td>
<td>Powder Plant – N2</td>
<td>1974</td>
</tr>
<tr>
<td>10</td>
<td>Harij Chilling Centre</td>
<td>1976</td>
</tr>
<tr>
<td>11</td>
<td>Kadi Chilling Centre</td>
<td>1977</td>
</tr>
<tr>
<td>12</td>
<td>Jagudan Bull Farm</td>
<td>1980</td>
</tr>
<tr>
<td>13</td>
<td>Ubkhal Cattle Feed</td>
<td>1981</td>
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<td>14</td>
<td>Powder Plant – N3</td>
<td>1983</td>
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<tr>
<td>15</td>
<td>Powder Plant – N4</td>
<td>1991</td>
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<tr>
<td>16</td>
<td>SCM Plant – Mehsana</td>
<td>1995</td>
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<td>17</td>
<td>ISO, HACCP Certification</td>
<td>2000</td>
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<td>18</td>
<td>SCM Plant – Vihar</td>
<td>2000</td>
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<td>19</td>
<td>Automation – N4 Plant</td>
<td>2001</td>
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<tr>
<td>20</td>
<td>ERP – Oracle 11i Business Suite Implementation</td>
<td>2004</td>
</tr>
<tr>
<td>21</td>
<td>Dairy Plant At IMT, Manesar, Haryana</td>
<td>2006</td>
</tr>
</tbody>
</table>
Awards:

The Union has been awarded National Productivity Award for two consecutive years of 2004-05 and 2005-06 for the second best productivity in the large unit’s category of Dairy Processing Industry.

Activities:

Cooperative Development:

Well organized Cooperatives are backbones in the economic & social development of our villages and have the potential to transform villages into prosperous and ideal communities. The activities of the Union include Milk Day Programs, Cleanliness Drives, Leadership Programs, Cooperative Development Programs, Programs on Cooperative Principles and Practices etc.

Women Leadership:

In village economy women constitute an important driving force; there is, however, a need to help their potential to bloom to its’ full potential. Women Leadership &
Awareness Programs of the Union are aimed to provide necessary impetus for active participation of the women in village / cooperative activities.

**Milk Products:**

Product range ...

*Amul - Sagar - Dudhsagar*

**Cattle Feed:**

We have total cattle feed production capacity of 900 TPD and our plant to expand further till 1400 TPD, Which is expected that we will be self sufficient in the cattle feed requirement of our member for the next 3 to 5 year.
**Product Quality:**

We supply best quality cattle feed, which is produce under quality supervision of nutritionist from premium quality ingredients after many quality control and lab tests.

In our modern state of art manufacture plant which take care of all nutrient of ingredient and also improve its digestibility for best results.

**Products:**

- Ghee
- Butter
- Powder
- Ice Cream
- Sweetened Condensed Milk