CHAPTER I
INTRODUCTION

Agriculture is the primary occupation in India and more than 70 per cent of the population lives in rural areas and most of them are marginal farmers and agricultural labourers. Agriculture provides only seasonal employment for about 3-4 months in a year, and for the rest of the period, literally, they are badly in need of employment. As such there is a great demand for rural industries, which provide employment for them. Dairy industry is one of the important rural industries, which provides additional employment and income to these marginal and agricultural labourers in India.

As a matter of fact, in India more than 50 percent of the population is women. In the case of small and marginal farmers’ families, women also help the head of the family in securing their livelihood. Women are involved not only in the agricultural activities but also in many traditional income-generating schemes, like basket making, pottery, home-poultry, cotton-spinning etc. In modern times the dairy industry not only provides employment to its rural masses but also generates self-employment to the rural women, who are searching for various incomes generating schemes. Thus, the dairy industry provides scope for the improvement of the rural areas by generating additional income to the marginal and agricultural labourers including women, and thereby increasing their standard of living. The dairy industry assures remunerative price and creates assured market to the producers of milk. It safeguards the interests of the milk producers by providing necessary technical inputs for the rapid progress of the dairy industry in India. The dairy industry not only safeguards the interests of the producers of milk, but also assures regularity of supply of milk to the urban consumers. It brings the
milk producers and consumers nearer by eliminating the middlemen as the dairy industry are managed by the producers themselves on co-operative basis.

- **Cooperation is the preferred form of enterprise, giving people control over the resources they create through democratic self-governance.**

- **Self-reliance is attained when people work together, have a financial stake, and both enjoy the autonomy and accept the accountability for building and managing their own institutions.**

- **Progressive evolution of the society is possible only when those whom it seeks to benefit direct development.**

- **All beneficiaries, particularly women and the less privileged must be involved in cooperative management and decision making.**

- **Technological innovation and the constant search for better ways to achieve our objectives is the best way to retain our leading position in a dynamic market.**

- **While our methods change to reflect changing conditions, our purpose and values must remain constant.**

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 farmers’ 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 districts dairy farmers, Amul grew rapidly from its initial base of two societies and two hundred litres of milk. That growth, however, posed a challenge that threatened its existence: flush season production of milk exceeded the demand. Yet the cooperatives 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 devolvement. 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 centres 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 block sand 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. Last, but not least, 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 Immunologicals, which is the largest FMD vaccine plant in Asia.

Mastitis is another endemic disease that undermines the health and productivity of our national milch 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 long-life 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.

**The Amul story:**

In the 1940s, in the district of Kaira in the State of Gujarat, India, a unique experiment was conducted that became one of the most celebrated success stories of India.
At that time, in Gujarat, milk was obtained from farmers by private milk contractors and by a private company, polson's Dairy in Anand, the headquarters of the district. The company had a virtual stranglehold on the farmers, deciding the prices both of the procured as well as the sold milk. The company arranged to collect, chill and supply milk to the Bombay Milk Scheme, which supplied milk to the metropolis of Bombay, and to cities in Gujarat. Polson's Dairy also extracted dairy products such as cheese and butter. Polson's Dairy exploited its monopoly fully; the farmers were forced to accept very low prices for their products, and the decisions of the company regarding the quality and even the quantity of the milk supplied by the farmers were final.

In 1946, inspired by Sardar Vallabhbhai Patel, a local farmer, freedom fighter and social worker, named Tribhuvandas Patel, organized the farmers into co-operatives, which would procure milk from the farmers, process the milk and sell it in Bombay to customers including the Bombay Milk Scheme. Purely by chance, in 1949, a mechanical engineer named Verghese Kurien, who had just completed his studies in engineering in the USA, came to India and was posted by the Government of India to a job at the Dairy Research Institute at Anand. Settling down in Anand was hardly a part of his career plans; however, a meeting with Tribhuvandas Patel changed his life and changed India's dairy industry.

What Mr. Patel requested of Dr Kurien was hardly to bring about such a revolution. All he wanted was help in solving various problems with bringing into working order some of the equipment just purchased by his co-operative, especially the chilling and pasteurizing equipment. These items of equipment malfunctioned, leading to the rejection of large quantities of milk by the Bombay Milk Scheme.
Dr Kurien's involvement with the Kaira District Co-operative Milk Producers' Union Limited (KDCMPUL; the registered name of the co-operative) grew rapidly. Initially he merely provided technical assistance in repairing, maintaining and ordering new equipment but subsequently he became involved with the larger sociological issues involved in organizing the farmers into co-operatives and running these co-operatives effectively. He observed the exploitation of farmers by the private milk contractors and Polson's Dairy, and noted how the co-operatives could transform the lives of the members.

The most important feature of these co-operatives is that they are run purely as farmers' co-operatives, with all the major decisions being taken by the farmers themselves. The co-operatives are not 'run' by a separate bureaucracy with vested interests of its own; the farmers are truly in charge of their own decisions. Any farmer can become a member by committing to supply a certain quantity of milk for a certain number of days in a year and shall continue to be a member only if he keeps up this commitment. Each day, the farmers (or actually, in most cases, their wives and daughters) bring their milk to the village collection centres where quantity of milk is checked in full view of all and quality (milk fat content) is checked using a simple device, again in full view of all. The farmers are paid in the evening for the milk they supplied in the morning, and in the morning for the evening's milk. This prompt settlement in cash is a great attraction to the farmers who are usually cash starved. Thanks to the above system, there are no disputes regarding quantity or quality of the milk supplied by each farmer.

It was soon realized that it was not enough to merely act as the collection and selling agents for the farmers. A variety of support services were also required to enable
the farmers continue selling milk of adequate quality and to avoid disasters such as the
death of their cattle (for a family owning just one or two cattle and depending on its/their
milk for their income, death of a cow could indeed be a disaster). The farmers were
progressively given new services such as veterinary care for their cattle, supply of good
quality cattle feed, education on better feeding of cattle and facilities for artificial
insemination of their cattle. All these were strictly on payment basis; none of the services
were free.

This experiment of organizing farmers into co-operatives was one of the most
successful interventions in India. A very loyal clientele was built up who experienced
prosperity on a scale they could not have dreamt of 10 years earlier. With good prices paid
for their milk, raising milch cattle could become a good supplementary source of revenue
to many households. The co-operatives were expanded to cover more and more areas of
Gujarat and in each area, a network of local village level co-operatives and district level
co-operatives were formed on a pattern similar to that at Anand (the so called Anand
Pattern). In 1955, KDCMPUL changed its name to Anand Milk Union Limited, which
lent itself to a catchy abbreviation, Amul, which meant priceless in Sanskrit. The word
was also easy to pronounce, easy to remember and carried a wholly positive connotation.
It became the flagship brand name for the entire dairy products made by this union.

In 1954, Amul 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—for the first time in the world, these products were made from
buffalo milk. Subsequent years saw the addition of more plants to produce different
products. Starting from a daily procurement of 250 litres in 1946, Amul had become a milk giant with a large procurement base and a product mix that had evolved by challenging the conventional technology.

On his visit to Anand in 1965, the then Prime Minister of India, Lal Bahadur Shastri, was impressed by what he saw—a system that procured, processed and delivered high quality milk to distant markets cost efficiently. Shastri could also see the difference that the income from milk had made to the standard of living of farmers in the area. What impressed him the most was that Amul had done all this without government assistance, in marked contrast to a number of government sponsored dairy programmes that were doing poorly in terms of procuring and marketing good quality milk and boosting farmers' incomes. Shastri asked Dr Kurien to replicate Anand's success all over India.

A pattern similar to the Anand Pattern was to be built in other states of India. This was carried out under a programme launched by the Government of India, entitled 'Operation Flood'. The operation was co-coordinated by the National Dairy Development Board (NDDB), a body formed by the Government of India with this specific objective.

**Backdrop to Operation Flood**

India has traditionally been known as the land of 'milk and honey'. Dairying was an important contributor to the village economy in ancient India. Much folklore has been woven around the people involved in this profession. Gradually, however, dairying lost its charm in the face of competition from many other professions that surfaced after the effects of the industrial revolution started to show in India.
With increased industrialization, urban centres started to appear in all corners of the country. With their very high population densities, these cities made very good markets for milk and milk products. These urban pockets, however, proved to be the biggest enemies to the sacred and useful profession of dairying. Very few individuals practiced dairying, since keeping and maintaining cattle needed large spaces and these were not available in densely populated cities.

The liquid milk schemes did not have the capacity to serve their cities' entire needs. Also, as modern dairies, they could not indulge in dilution of the milk. For some time—when imported milk powder was cheap and the government had foreign exchange to spare—they used imported milk powder to subsidize their operations and expand somewhat their meager supplies of milk. Few milk schemes, however, covered more than one-third of their city's needs. Moreover, when they depressed prices by the use of imported powder, they discouraged local milk production. More recently, most liquid milk schemes have increased their prices, only to have the private vendors match this price increase so that, aided by dilution, they could continue to outbid the milk scheme for rural milk in the city's milk-shed areas.

The ultimate loser was the common man and his infants. In the city, he saw milk getting more dilute and more expensive each year, whilst the city got filthier and unhealthier to live in. In the countryside, the ordinary milk producer saw his best milch animals going to the city for premature slaughter, while the milk produced by his remaining, lower-yielding milch animals still brought him only a small share of the rupees, which the city consumers paid for that milk.
Operation Flood

This was the anti-dairy development cycle that Operation Flood sought to reverse by the use of a glut of donated milk products from abroad. These surpluses were used in two ways to speed up Indian dairy development. First, the donated milk products were used to reconstitute milk, and therefore provide the major cities' liquid milk schemes with enough milk to obtain a commanding share of their markets. Secondly, the funds realized from reconstitution and sale of donated products were used to resettle city-kept milch animals and permit their progeny to multiply, to increase organized milk production, procurement and processing, and to stabilize the major liquid milk schemes' position in their markets. The objectives of Operation Flood can be summarized as follows:

1. To enable each city's liquid milk scheme to restructure and capture a commanding share of its market
2. To identify and satisfy the needs of milk consumers and producers, so that consumers' preferences can be fulfilled economically and producers can obtain a larger share of the rupees paid by consumers for their milk
3. To facilitate long-term productive investment in dairying and cattle development and
4. To ensure a sufficient supply of personnel to handle each facet of the project.

The three phases of Operation Flood succeeded in fulfilling a major part of their objectives. Today, there are 22 state federations in India, with 170 district level unions, more than 76 thousand village level co-operative societies and 11 million milk producer members in the different states. These co-operatives collect an average of 15 million litres
of milk each day. Fresh liquid milk, packed and branded, is marketed in over 1000 cities and towns in India by these co-operatives; annual sales turnover exceeds 80 billion Indian rupees. The Anand Pattern has been tested out of Anand and out of Gujarat; it has been found to be a robust structure, wherever it has not been tampered with.

The NDDB invested about Rs 20 billion in the Operation Flood programme over two decades (1971–94). During this period, milk production in India increased by 40 million tonnes from 20 million tonnes in 1970 to 60 million tonnes in the 1990s. No other development project in the world has yielded such a huge incremental return, Rs 400 billion against a total investment of Rs 20 billion. These concerted efforts in dairy development have made India the largest producer of milk in the world.

**Structure of the Anand Pattern:**

The basic unit in the Anand Pattern is the village milk producers' co-operative—a voluntary association of milk producers in a village who wish to market their milk collectively. All of the village milk producers' co-operatives (primaries) in a district are members of their district co-operative milk producers' union.

Every milk producer can become a member of the co-operative society. At a general meeting of members, representatives are selected to form a managing committee, which frames the policies of the society to govern the day-to-day affairs relating to milk. Milk collection, the testing for milk fat content, and sale of cattle feed etc. is handled by paid employees from the same village. Each society also provides artificial insemination
(AI) services and veterinary first aid (VFA). Thus, these primaries also generate local employment in the rural community.

Each producer's milk is tested for fat percentage (many also measure solids-not-fat) and is paid for, on the basis of the quality of the milk. Usually, the morning milk is paid for in the evening and the evening milk is paid for the next morning.

The primary milk producers' societies are affiliated to a district union, which owns and operates a feeder/balancing dairy cattle feed plant and facilities for production of semen and its distribution. The union also operates a network of veterinary services to provide routine and emergency services for animal health care.

The chairpersons of village societies elect the board of directors of the union, which frames the policies for the day-to-day management of the union's centralized facilities for milk collection, processing and marketing and also technical inputs. A managing director, who reports to the elected chairman and a board of directors, manages each union professionally. The dairy, owned by a union, usually has a milk processing plant to convert seasonal surpluses of liquid milk into milk powder and other conserved products. With the help of the dairy plant, the union is able to ensure that the milk producers get 80–90% of the lean season price even in the flush season. The farmers are, therefore, able to get a good price for the bulk of the milk that is produced in the flush season. This has enabled the farmers to get 20–40% higher prices than they would have if they had not been a part of the co-operative system. Before the co-operatives, the middlemen usually paid only 60–70% of the lean season price in the flush season.
The bulk of out-of-pocket expenditure on milk production was for the purchase of cattle feed ingredients, such as oilseed cakes, cottonseed etc. The cattle feed plant owned and operated by the co-operative is able to provide nutritionally balanced cattle feed at prices 40% lower than the prices of traditional feeds. The village milk producers' co-operative societies (primaries) market this cattle feed.

Milk producers are able to substantially increase their returns from milk production because of better returns for their milk and lower feeding costs. The milk collected from the village is usually sent to the co-operative dairy using trucks hired by the co-operative union. Each co-operative dairy tries to market the bulk of its milk as liquid milk and converts surplus milk into products with a longer shelf life. Professional managers employed by the co-operative ensure that they get the best returns for their produce. The profits made by the dairy are redistributed to the milk producers as a subsidiary payment. Many societies are able to pay substantial amounts as bonuses to their milk producers, based on the proportion of business contributed to the co-operatives.

Management of dairy co-operatives:

In Anand Pattern Co-operatives, while the producers themselves determine the policies, the opportunity is provided to the professionals to implement the policies as well as to manage the operations. Even at the village level (primaries), the nine-member management committee determines how best they should function within the prescribed framework, how best its members' interests can be protected and how best the societies can function as viable business units. However, at this stage, the managing committee of nine members does the routine work of management itself. For carrying out day-to-day
work, necessary manpower from the same village is trained and deployed. These persons are the employees of the respective village co-operatives; the nine-member committee takes decisions about their continuance of service or dismissal.

At the district union level, the board includes the chairpersons from only the affiliated milk co-operative societies, which are qualified to send their representatives (of the 17 members on the board, 12 are chairpersons of the affiliated primaries). One of them is elected as the chairperson of the board. While this board formulates policies at the district level, the qualified professionals headed by a managing director carry out the day-to-day management.

The primary societies in particular milk shed federate and form a dairy co-operative milk producers union. As more district unions were organized in Gujarat State, it was felt necessary to organise a federal body at the state level. This federal body exists to co-ordinate the overall activities of the district unions, to provide a platform for sharing common benefits, to avoid competition between the district unions and to ensure rigid quality control for the production of top quality milk products. The state federation provides the direct link between the district milk co-operatives and the National Milk Grid (NMG). At the national level, the NMG co-ordinates the supply of milk from the surplus-producing areas to the potential urban consumer markets. It helps to moderate the seasonal and regional imbalance between demand and supply of milk.

The National Co-operative Dairy Federation of India (NCDFI), a federal society, was formally established in 1970 as a national level apex organization. Now it has been restructured through affiliation with its member apex co-operatives at the state levels. The
NCDFI, thus, provides the basic institutional framework for better co-ordination, monitoring and guidance, and gives adequate direction to the state federations to ensure a stronger co-operative milk marketing system in the country. The NCDFI is the apex body of all the state dairy federations in the country, which have been entrusted with the management of the NMG activities. To facilitate operations of the NMG, four regional programming committees have been established by the NCDFI, which meet periodically in their respective regions. These committees provide a platform for the participating federations to transact business and share each other's experiences in the management of milk procurement, handling and marketing. The activities of the four programming committees are co-coordinated by a central programming committee.

Even at the profit-sharing level, the distribution is made in proportion to the volume of business contributed by each member; therefore, bonuses etc. are determined from the value of the commodity supplied by the members. This in turn ensures that while the co-operative does business, it also makes its members quality conscious.

The Anand Pattern co-operatives have also taken into consideration the capabilities of each tier, vis-à-vis the systems they should own. These systems include the processing, marketing, advertisement and input organization etc. along with the large capital-based operations that are owned either by the district union (the second tier) or the state federation (third tier). The primary co-operatives, on the other hand, act as procurement units for the individual members and as retail outlets for the union/federation to ensure that inputs reach the individual members at the village level on time.
This two-way constant communication, between the primary unit at the village level and the district/state level bodies, has guarded the Anand Pattern co-operatives against the dangers faced by large co-operatives, which tend to drift away from individuals, as they grow larger. Thus, the Anand Pattern co-operatives ensure that the services required, to market the produce or to improve production, reach their members.

Indian dairy industry is one of the fastest growing sectors in India. It has made incredible evolution for the last several years. It is proud to say that India holds no. 1 position in the world in milk production- 88MT. (2003-04). This production brings with it enormous challenges before the dairy industry to procure, chill, pasteurize/process, package and distribute milk across the length and breadth of the country. This also imposes great responsibilities on the Indian dairy industry to improve the quality of the milk and open new avenues/opportunities for employment. A recent study has estimated that there are nearly 36 millions unemployed people in India. New research and development programmes in milk production, processing and export business promotion in total perspective will generate new jobs in direct and allied activities.

In spite of being the largest producer of milk, the per capita consumption and average yield per cattle remains low and India’s dairy export share is less than 1%. As per the vision of our honorable president Dr. A.P.J. Abdul Kalam, India should be a developed nation by 2020. With raising income levels and serious effort to improve the milch animal it can be estimated that India would produce 175 MT and 200 MT of the milk by the year 2015 and 2020 respectively, from the present production figures of 88MT. This will require a highly efficient network of cold storages, packaging and
distribution, so that processed milk and milk based products can reach the vast consumer base in an efficient and cost effective manner.

Indian dairy industry is growing very rapidly @4.5% per annum. The global milk production in the year 2003 was reported at 600 MT, Hence it may be calculated that with the stipulated annual growth rate of 0.5-1.0% the world milk production by 2020 is expected to raise to 650 –700 MT. India’s share to world milk production at that time would substantially increase from the present level of 15% to above 30%. India’s dairy sector is expected to triple its production in the next 10 years in view of expanding potential for export to Europe and Middle East and southeast. Also today India is the lowest cost producer of per liter of milk in the world, at 27 cents, compared with the US 63 cents, Japan’s $2.8. In order to take the advantage of lowest cost and increasing the production of milk in this country, MNCs are planning to expand their activities here.

Most of the countries in Asia and African countries are large importers of the dairy products, and therefore these regions are emerging as important dairy export market. Realizing the nutritional importance of milk in the dietary regime the consumption of the milk and milk products is increasing in these continents, which account With 198 million cattle and 86 million buffalos India has the largest population of milch animal in the world. They constitute more than 50% of the cattle in the world. Unlike other milk producing countries, 54% of India’s milk comes from buffalo’s, which endowed with unique processing qualities. Buffalo milk as an advantage to India because buffalo especially appropriate for commercially important dairy products such as Mozzarella cheese, casein cream, paneer, khoa etc. India may emerge as leading supplier of these products in the world market. Indian dairy industry has to derive maximum benefits of the
uniqueness and positive virtues of buffalo milk to obtain the competitive edge in the
global dairy market. The increasing world production of milk has made the availability of
the milk and milk products much easier in most countries through imports over 74% of the
world human population.

Imagine every morning and evening some 9 million farmers carrying potfuls
of milk to their cooperative – milk that will travel from remote villages to towns and
cities throughout India. Today, these farmers own some of the largest and most
successful business in India.

Plan of the Study:

India is an agricultural country. Nearly 70 per cent of the population lives in rural
areas and depend mostly on agriculture. Agriculture provides employment only few
moths in a year. Half of the population in India is women and they actively involve in
agriculture. Therefore, not only women but also all the agriculturists keep themselves idle
for the remaining months in the year. During this off-season if they are provided with
some alternative income generating activities, they not only improve their financial
position but also add to the national income. In this direction, dairy industry can help in
providing employment opportunities to the rural masses. In this backdrop the present
study is undertaken to highlight the dairy industry and its contribution to the rural people
and to the Indian economy as a whole.

Chapter II outlines the evolution of dairy industry in India and in Andhra Pradesh.
It also explains the establishment of different dairy cooperatives and dairy development in
India since their inception.
Chapter III brings out the history of Sangam dairy, a cooperative organization, in Guntur district of Andhra Pradesh. It also explains the objectives of Sangam Dairy in detail.

Chapter IV brings into light the historical and geographical importance of Guntur district. It also elucidates the various natural resources like mineral, water etc. It covers all matters relating to infrastructure, railways, other transport, banking, industry, tourism, multipurpose projects, production of commercial crops etc.

Chapter V outlines the objectives, importance, significance, scope, utility and limitations of the study. It also deals with the research methodology, selection of the topic, hypothesis, and selection of the sample unit, period of study and sources of data. It also includes the statistical techniques used to analyze the data.

Chapter VI explains Planning and organizing functions of management with special reference to Sangam Dairy.

Chapter VII dealt with the functions of management viz., direction, coordination and control.

Chapter VIII elaborately discusses almost all the marketing aspects concentrating mainly on marketing mix.

Chapter IX concentrates on the personnel management areas like recruitment, placement, training, labour turnover, absenteeism etc.

Chapter X analyses the financial statements of Sangam Dairy. It also deals with the important financial areas like sources of finance, capital structure, capital budgeting etc.
Chapter XI outlines the conclusions and suggestions. It also points out the suggestions made for the overall improvement of the Sangam Dairy in one hand and the dairy industry on the other. It also covers Sangam dairy in the next 10 years.