CHAPTER III
PROFILE OF THE STUDY ORGANIZATION

3.1 DAIRY:

A dairy is a facility for the extraction and processing of animal Milk-mostly from cows, sometimes from buffalo, sheep, horses or goats for human consumption.

As an adjective, the word dairy describes milk based or milk related products and processes, e.g. dairy farm, dairy cattle dairy goat. A dairy farm produces Milk and a dairy factory processes it into a variety of dairy products.

New Zealand English – A ‘dairy’ means a corner shop, Milk bar or supersets and “dairy factory” is the term for what is elsewhere a dairy.

In the past, people in agricultural Societies owned dairy animals that they milched for domestic or Village consumption, a typical example of a cottage industry. The animals also might serve multiple purposes (e.g. first for purpose of industrial Revolution/ industrialisation and urbanization the supply of Milk became a commercial industry, with specialised breeds of Cow being developed for dairy as distinct from beef. Historically the Milching and the processing took place close together in space and time on a dairy farm.

People Milched the animals by hand unable to have milch animals of their own due to Lack of grazing lands. Near the town peasants could make some extra money on the side by having additional animals and selling the Milk in town. The dairy farmers would fill barrels with the Milk in the morning and bring it to market on a wagon.

Keeping Milk cool helps preserve it. When wind mills and well pumps were invented one of its primary uses was for cooling Milk to extend its storage life before going to the town market. The naturally cold underground water would be continuously pumped into a tub and containers of Milk set in the tub
to cool after Milching. This method of Milk cooling was extremely popular before the arrival of electricity and refrigeration.

Before electrification most milch animals were still Milched by hand, one after the other, each morning and night at Milching time. This was feasible when a farm had up to about six milch animals but took too long as the herd size increased. Electrification brought the vacuum pump, and the automatic Milching Machine.

The first Milching machines were an extension of the traditional Milk pail. The early Milker device fit on top of a regular Milk pail and sat on the floor under the milch animal. Following each milch animal being Milched, the bucket would be dumped into a holding tank.

3.2 DAIRY FARMING IN THE WORLD:

In the United States, the top four dairy states are in order by total Milk production California, Wisconsin, New York, and Pennsylvania. Dairy farming is also an important industry in Florida, Minnesota, Ohio and Vermont. The world’s largest exporter of dairy products is New Zealand. Japan is the world’s largest importer of dairy products.

Table 3.1: World Milk Production Not including EU Countries (2006)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Milk Production MT/Year</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>India</td>
<td>91.1</td>
</tr>
<tr>
<td>2</td>
<td>United States</td>
<td>77.2</td>
</tr>
<tr>
<td>3</td>
<td>Russia</td>
<td>32.8</td>
</tr>
<tr>
<td>4</td>
<td>Brazil</td>
<td>23.2</td>
</tr>
<tr>
<td>5</td>
<td>China</td>
<td>16.8</td>
</tr>
<tr>
<td>6</td>
<td>New Zealand</td>
<td>14.6</td>
</tr>
<tr>
<td>7</td>
<td>Australia</td>
<td>10.6</td>
</tr>
<tr>
<td>8</td>
<td>Mexico</td>
<td>9.8</td>
</tr>
<tr>
<td>9</td>
<td>Turkey</td>
<td>9.5</td>
</tr>
<tr>
<td>Country</td>
<td>MT per year</td>
<td></td>
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<tr>
<td>------------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>8.4</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
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<tr>
<td>Argentina</td>
<td>8.0</td>
<td></td>
</tr>
<tr>
<td>Switzerland</td>
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</tr>
<tr>
<td>South Korea</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>Norway</td>
<td>1.6</td>
<td></td>
</tr>
</tbody>
</table>

*Source: 2007 OECD, Agricultural Outlook Table*

**Graph No. 3.1 Graphical Representation of World Milk Production Not including EU Countries**

The EU is the largest Milk Producer in the world with 143.7 million tonnes in 2003. This data encompassing the present 25 member countries, further broken down into the production of the original 5 member countries, with 122 million tonnes and the new 10 mainly former Eastern European Countries with 21.7 million tonnes.
Table 3.2 : Milk Production Data for EU Countries

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Milk Production MT/Year</th>
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<tbody>
<tr>
<td>1</td>
<td>Germany</td>
<td>28.5</td>
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<td>France</td>
<td>24.6</td>
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<tr>
<td>3</td>
<td>United Kingdom</td>
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<tr>
<td>4</td>
<td>Poland</td>
<td>11.9</td>
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<tr>
<td>5</td>
<td>Netherland</td>
<td>11.0</td>
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<tr>
<td>6</td>
<td>Italy</td>
<td>10.8</td>
</tr>
<tr>
<td>7</td>
<td>Spain</td>
<td>6.6</td>
</tr>
<tr>
<td>8</td>
<td>Ireland</td>
<td>5.4</td>
</tr>
<tr>
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<td>Denmark</td>
<td>4.7</td>
</tr>
<tr>
<td>10</td>
<td>Sweden</td>
<td>3.2</td>
</tr>
<tr>
<td>11</td>
<td>Austria</td>
<td>3.2</td>
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<tr>
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<td>15</td>
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<td>1.9</td>
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<td>16</td>
<td>Portugal</td>
<td>1.9</td>
</tr>
<tr>
<td>17</td>
<td>Lithuania</td>
<td>1.8</td>
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Graph No. 3.2 Graphical Representation of Milk Production Data for EU Countries
Table 3.3: World Top 20 dairy Companies by Turnover

<table>
<thead>
<tr>
<th>Company</th>
<th>Country</th>
<th>Ownership</th>
<th>Dairy Sales Billion Euro</th>
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</thead>
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<td>Nestle</td>
<td>Switzerland</td>
<td>Private</td>
<td>14.7</td>
</tr>
<tr>
<td>Dean Foods</td>
<td>USA</td>
<td>Private</td>
<td>7.0</td>
</tr>
<tr>
<td>Dairy Farmers of America</td>
<td>USA</td>
<td>Co-Operative</td>
<td>6.8</td>
</tr>
<tr>
<td>Donone</td>
<td>France</td>
<td>Private</td>
<td>6.5</td>
</tr>
<tr>
<td>Arla Foods</td>
<td>Denmark/</td>
<td>Co-Operative</td>
<td>6.4</td>
</tr>
<tr>
<td>Fonterra</td>
<td>New Zealand</td>
<td>Co-Operative</td>
<td>6.3</td>
</tr>
<tr>
<td>Lactails</td>
<td>France</td>
<td>Private</td>
<td>5.7</td>
</tr>
<tr>
<td>Kraft foods</td>
<td>USA</td>
<td>Private</td>
<td>5.0</td>
</tr>
<tr>
<td>Unilever</td>
<td>Netherland/UK</td>
<td>Private</td>
<td>4.8</td>
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<td>Friesland Foods</td>
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<td>Co-Operative</td>
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<td>Bongrain</td>
<td>France</td>
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</tr>
<tr>
<td>Meiji Dairies</td>
<td>Japan</td>
<td>Private</td>
<td>3.7</td>
</tr>
<tr>
<td>Compina</td>
<td>Netherland</td>
<td>Co-Operative</td>
<td>3.6</td>
</tr>
<tr>
<td>Morinaga Milk Industries</td>
<td>Japan</td>
<td>Private</td>
<td>3.3</td>
</tr>
<tr>
<td>Parmalat</td>
<td>Italy</td>
<td>Private</td>
<td>3.3</td>
</tr>
<tr>
<td>Land O.Lakes</td>
<td>USA</td>
<td>Co-Operative</td>
<td>3.2</td>
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<tr>
<td>Humana Milch Union</td>
<td>Germany</td>
<td>Co-Operative</td>
<td>2.7</td>
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<tr>
<td>Saputu</td>
<td>Canada</td>
<td>Private</td>
<td>2.3</td>
</tr>
<tr>
<td>Schreiber</td>
<td>USA</td>
<td>Private</td>
<td>2.3</td>
</tr>
<tr>
<td>Nordmilch</td>
<td>Germany</td>
<td>Co-Operative</td>
<td>2.1</td>
</tr>
</tbody>
</table>

3.3 THE DAIRY SCENARIO:

Dairying in India has come a long way. From being written off as a basket case a few decades back. India has emerged today as the largest Milk Producer in the world with an annual production of more than 91 million tonnes. More than 70 percent of our Milk Producers are small marginal farmers, the animals are low yielding non-descript ones and land holdings are small. By any yardstick, this is a remarkable feat. We could overcome our weaknesses because of our inherent faith in the Indian farmer whose courage in the face of adversity, whose skill as a farmer, and whose wisdom as a human being has transformed dairying in India.

The successes of India’s dairy industry is not a story of the triumph of science and technology. There have been no miracles. The white Revolution was possible because we created structures that give our farmers control over the resources they create. The structures have first and foremost returned a greater share of the consumers rupee to the farmers. They have built markets, supplied inputs and created value added products. These structures have forced others in the dairy business to complete fairly and they have helped turn the terms of trade in favour of the rural Producer.

Quality Milk is now available in over 1000 cities throughout the length and breadth of our country. And this is Milk with a difference – pasteurised, packaged, branded, owned by the farmers – a symbol of quality.

The market scenario is changing fast. A rise in household incomes had led to a metamorphosis at rural and smaller market. There has been a significant increase of middle class families and migration from rural to areas of smaller developing towns. All this has resulted in the emergence of growing markets and demand in smaller towns, across the country. The requirements of our nation on the move must be met first. The needs of an ever growing population have to be met with sustainable economic development. India’s population has risen from 350 million in 1950 to 1000 million today. As cities draw people to new employment opportunities, the current rural ratio of 26:74
is like to because 33:67 by the year 2010. Population gives us one picture. The other is provided by demand for household commodities. By 2010, requirement for food-grains would touch 266 million tonnes rising to 343 million tonnes by 2020. For Milk the estimated consumption will be 153 million tonnes by 2010 and 271 million tonnes by 2020.

After meeting domestic demand, we will have to turn to global opportunities. However, the world is not waiting for Indian Milk and Milk products. If we are to achieve our destiny, it will require commitment, sacrifice, and unrelenting efforts.

The Potential for exports in the South Asian region is immense. We enjoy a natural advantage here. All the countries neighbouring India are basically Milk deficient and would continue to remain so for quite sometime. Therefore, it is only logical that India’s surplus Milk powder, butter and other branded Milk products should be exported to its neighbours.

The future of Indian Dairy Industry would also to a large extent depend on our ability to source new markets, we have to advantage of producing low cost Milk and therefore the challenge is to lower processing and marketing costs without compromising an quality. Under the pretext of globalization, may would like to set up shop in our country to exploit the cost advantage. The future of Indian Dairy Industry will have to be built on quality and quality alone. The Indian Dairy Industry must have latest modern technology for Milk processing and product manufacture. Indian dairying must address itself to issues of productivity, efficiency and response to consumer demands. Side by side it must upgrade and diversify the product mix into value added products to meet the challenges.

3.4 PRESENT INDIAN MARKET SCENARIO :

The Indian Milk products were developed to preserve the nutritional goodness of Milk and to extend the shelf-life under high ambient temperature.
Today the Milk production of India is growing at an exponential rate, hence, the onus of preserving the surplus Milk production is now on food processors.

According to the report on “Emerging opportunities beyond liquid Milk, prepared by the confederation of Indian Industries (CII) handmade dairy delicacies have gone into mars production through industrial application on a wide range of agri-businesses. The report stated that the market for this largest and fastest growing segment of Indian dairying is estimated at Rs. 50,000 crores. The indigenous dairy products are the country’s largest selling and most profitable segment and account for 50% of the Milk produced. The growth of this section is estimated at Rs. 5000 crores annually and covers products such as dahi, panner, rasogolla and shrikhand among others. Significant headway has been made in the industrial production of traditional sweets including gulabjamun, Peda, and burfi.

3.5 MILK PRODUCTION TREND:

The bulk of Milk is produced in Northern and Western India, amounting to 62 percent. Further, 9 on tot 28 states account for 94 percent of India’s Milk output. In the past the most preferred way was to make ghee, butter and SMP out of Milk moreover, buffalo, Milk is surplus in the north whereas in East and South the cow Milk is surplus.

Buffalo Milk is most preferred for the production of sweets based on desiccated products like Khoa (burfi, Kalakand, Peda, gulabjamun) associated with fermented Milk (lassi, shrikhand, dahi, mattha etc.) and fat-rich traditional dairy products (ghee, makkhon etc.) whereas the cow Milk is most preferred Milk for acid coagulated Milk products like rasogolla, sandesh, raibhog etc.

3.6 CONSUMPTION TREND :

The changing economic scenario of India has resulted in increased annual income of the families. By 2006-07, about 70.5% families would be in middle class, and another 11.7% in upper class, and another 11.7% in upper
class. Hence, the consumption of sweets and other Indian delicacies would not depend on celebrations or festive seasons but become a part of regular meal.

The Indian traditional Milk products sector taken as a commendable initiative in modernizing its operation, including mechanization and automation. Packaging of traditional Indian dairy products needs improvement especially with respect of active packaging and modified atmosphere packaging to give an extended shelf-life under ambient conditions.

In many small cities, the milkman is the first person one meets in the morning most of us also starts cur day with a cup of tea made from rich, creamy milk and retire to bed, after having a glass of hot milk. We use milk and milk products throughout the day. A high workforce is employed in the dairy sector in order to ensure sufficient availability of dairy products.

### 3.7 DAIRY DEVELOPMENT IN INDIA:

#### 1 DAIRYING IN ANCIENT PERIOD:

Milk is called as a perfect food. Milk has long been recognised as the most complete single food available in nature for the maintenance of health and promotion of growth of the mammals. It is not exactly known as to when the man began to utilise Milk of animals. But it is agreed fact that the Aryans were to domesticate cattle and use their Milk as a food, this was as back as 1500 to 2000 B.C. The Aryans started to worship the cow and still to date the same practice is being followed by all over India. The cows and buffaloes were kept by Indians for Milk and the cow is called “Go Mata” meaning the mother Cow.

#### 2 DAIRYING IN PRE-INDEPENDENCE PERIOD:

Some of the princely states had State dairies called palace Dairies and as a hobby the princes maintained excellent herd of Indian Cows and buffaloes prior to 1900 an enterprising Swede, Mr. Edward Kaventer, established modern dairy farm in Calcutta, the then Capital of India. Kaventer also had modern dairy farms at the hill station of Darjeeling and Simala where the viceroy used to go in summer from Calcutta and Delhi. Mr. Kaventer was the first to use
Milching Machine as he had a few high yielding imported cows. Kaventer also started the first ever modern butter factory at Aligarh. However the first official move for organised dairying in the country took place around 1889 by setting up the first military Diary farm at Allahabad and creamery at Anand (Gujarat) for army units and their Hospitals and for sending bulk butter for troops in fray. Ever since Anand has been a centre of butter making. Apart from the military farms before 1947, there were some 60 private dairy firms, with north Indian breeds viz. - the sahiwal, sindhi and tharpakar. In early stages they handled mostly raw Milk, but latter on a few farms had small size pasturing equipment and power driven butter churns.

At the same time Messers Polsons started manufacturing table butter at Anand. The Milk and butter were supplied to military, but it was in short supply, therefore it was felt necessary to organise the commercial dairy plants in India, as a result of which the Government of India organised the training courses to operate dairy plants and the handling of Milk and Milk products. In 1995 the Board of Agriculture Government of India reviewed the position of dairy and recommended the appointment of an Imperial dairy expert in India, and accordingly the first Imperial dairy expert was appointed in 1920. In 1923 the Imperial Imperial Institute of Animal Husbandry and Dairying was established at Bangalore, which was shifted to Karnal and was named National Dairy Research Institute. The National Dairy Institute is the nodal institute in the dairy research and training. Until independence, dairy development was at its primary stage involving only in training and Commercial approach only.

3 DAIRYING IN AFTER INDEPENDENCE PERIOD:

After independence, particularly neither the ardent of the five year plans, dairying has received greater attention as more and more funds were allocated to it. It is realised that promotion of dairying not only Contribution to the national health building but also creates substantial employment and income opportunities to the various groups of people engaged in the dairy farming. This dairy industry in India has developed rapidly daring the last few
decades both in terms of total Milk production. 1981 India ranked the first amongst the Asia Milk producing Countries and now it ranks first in the world.

One of the major Milk schemes introduced in the country after independence was the Greater Bombay Milk scheme. The Bombay Milk scheme consisted of a market Milk plant in Bombay supplied with Milk by District co-operative Milk Producers Union. The Indian dairy acquired substantial growth during the five year plans. Achieving an animal output of more than 69 million tonnes. The Milk production in the country during 2000-01 way estimated 80.9 million tonnes and this increased to 92.2 ml in 2003-04, and 106.9 million tonnes in 2005-06. The dairy industry at the country is not only number one in the world but also represents sustained growth in the availability at Milk and Milk products for the increasing population at the country. Another notable thing is that dairying has become an important secondary source of income for millions of recur families and for millions more have assured the most important role in providing employment and income. The per capital availability at Milk has also increased from 225.57 gms per day in 2000-01 to 243.64 gms per day, and 256.49 gms per day in 2005-06, but it is still lower when it is compared to advanced countries at the world average of more than 246 gms per day. Efforts are made in the country to increase the products of Milk animals and this increase the per availability at Milk.

3.8 PRESENT STATUS OF DAIRY INDUSTRY IN INDIA

Seventy five percent of India’s population is engaged in agriculture. Most at the families Consist of small farmers, marginal farmers and agricultural laborers. Even agriculture laborers who do not own any land keep one or two buffaloes or cows and feed them an Co-Operative residues and fodder. The dairy development in India has been Co-Operative pattern. In every Village there is a Milk Co-Operative Society managed by elected representatives at the Milk Producer members In “operation Flood” over 10 million farmers have organised themselves into about 1,70,000 Village Co-Operative Societies, which are federated into 170 District Milk owns owning dairy plants, cattle
feed plants, chilling plants and other necessary infrastructure. There are federated into 23 State level federations. Co-Operative dairies collect over 9 million liters at Milk every day. The income to farmers was doubled. Over Rs. 8500 million are paid by the Milk Co-Operative Societies each year to the farmers for the Milk they produce and supply.

Milk and Milk products play a very important role in Indians agriculture economy. Together they are regarded as the second largest agricultural common dairy to contribute to grow agricultural produce. During 1985 the value at Milk and Milk products exceeded Rs. 1,00,000 million ranking only next to rice. According to the livestock Concerns (1982) the bovine population was 192 million cattle and 69 million buffaloes. Of these the Milk cows number 54.37 million and buffaloes, 28.55 million.

During is a subsidiary occupation at almost all farmers at India. More than 60% at the families involved in dairying consist at small and marginal farmers and even agricultural laborers. The rural poor have a meaner animal income at less than Rs. 3800 per family. Dairy farming provides both nutrition and supplementary income to these families at weaker sections and encourage rural employment. It directly helps in increasing crop production through making fluid cash available for purchase at essential inuputs such as quality seeds, fertilizers and pesticides.

3.9 CO-OPERATIVE DAIRY PERSPECTIVE – VISION 2010 :

Dairy perspective Vision 2010 lays emphases on qualities, productivity and efficiency. It visualizes increase in Milk procurement by 33% at the marketable surplus in operation Flood areas i.e. 48.8 million kilograms per day and liquid Milk sales to 36.5 million kilograms per day. The NDDB has identified the thrust areas as raising the productivity at the national at Milk herd attaching significant improvement in the quality at Milk and Milk products, building an information network.
The future at the dairy industry will sit not only on the farmers, but on the scientist, the technologist and the profession India will have to equip a new generation to compete head to head with the best humans resources at the advanced dairying Nation.; The test before Indian dairy Industry is not only to remain biggest – but the best Indian dairy Industry must achieve transformation at an exploitive market into a nominatives one by expanding the farmer owed organisation that brought stability to the market while supporting production increases need a full range of quality inputs and service.

The responsibility for carrying on developmental activities in the Operation Flood areas have been entrusted to National Dairy Development Board, established by an Act or Parliament with the objectives of promoting dairy cooperatives, financing dairy infrastructure through loans and grants and providing technical and managerial support of the dairy Co-Operative Societies. NDDB has formulated perspective 2010 for strengthening of Co-Operative framework. The thrust areas of perspective 2010 are (i) strengthening Co-Operative business, (ii) enhancing productivity, (iii) improving quality and (iv) building a National Information Network.

Out of over 500 (presently 600) districts in the country, about 265 districts which had relatively high potential for Milk production were covered under the Operation Flood. In the remaining over 250 districts, the dairy development activities were taken up by the State Governments under their State Plan Schemes. To supplement these efforts, the Government of India has taken up the following schemes from 1993-94 onwards for dairy development.

3.10 ANAND PATTERN:

The Milk Co-Operatives under operation flood follow the Anand Pattern, which was pioneered by Dr. Kurien when he was General manager of the Kaira District Co-Operative Milk Producers Union limited, Anand. The success of the operation demonstrated that democratic institution in villages within a specific economic sector could help on entire Village community to develop themselves.
Dr. Kurien nurtured the Union from a daily collection of 500 liters a day in 1948 to one million liters a day in early 1990. He helped in set up similar District Co-Operative Union in six other districts of Gujarat which eventually federated to an apex body, the Gujarat Co-Operative Milk marketing federation limited an establishment which Dr. Kurien now ex chairman. The federation Covers more than 1.5 million Milk Producer families.

The Anand model has essentially an economic organizational pattern to benefit small Producers who join hands forming an integrated approach in order to handle their produce. The system enables them to obtain the efficiency and economy of a large scale business. The whole operation is professionally managed to that the individual Producers have the freedom to decide their own policies. The adoption of modern production and marketing techniques helps in providing those services that small Producers individually can neither afford nor manage.

The Anand model has succeeded largely because it involves people in their own development and because their interests are safe in their own hands. Under operation flood the entire institutional infrastructure set up at the Village level, the District level and the State level is owned and operated by the farmers themselves. The Anand model Co-Operatives have progressively eliminated middlemen, bringing the Producers in direct contact with consumers. In spite of opposition to these projects by middlemen and other powerful vested interests, Dr. Kurien has been able to make major breakthroughs in the dairy sector supported by the highest level in the Government of India.

3.11 FUNCTIONING OF ANAND PATTERN MODEL:

Anand pattern of dairy Co-Operative have a unique position. They are based on five Co-Operative principles viz. Voluntary membership, democratic decision making, limited interest on share capital, equitable distribution of surplus, Co-Operative. Their functional dimensions encompass not only the
economic but social and moral obligations towards their members. A typical Anand pattern Dairy Co-Operative structure has three tiers of well structured organisation with Milk Producer Constituting the Smallest unit of the entire business enterprise. The three tiers the District dairy costing operative Union is the most active unit because it owns the physical infrastructure required for Milk procurement, processions and manufacturing at Milk product and for generating input required for increasing milk production.

3.12 AMUL : THE ORIGIN :

The mighty Gangas at its origin but a tiny stream in the Gangotri ranges of the Himalayas. Similar is the story of Amul which inspired operation flood and heralded the white revolution in India. It began with two Village Co-Operative and 250 litres of Milk per day, nothing, but a trickle compared to the flood it has become today. Today Amul collects, processes and distributes over a million liters of milk and milk product per day, during the peak, on behalf of more than a thousand Village Co-Operative owned by a half a million farmer members. Further, as Ganga-ma carries the aspirations of generations for Moksha, Amul too has become a symbol of aspirations of millions of farmers. Creating a pattern of liberalization and self-reliance for every farmer to follow. The revolution started as an awareness among the farmers that grew and matured into a protest movement and the determination to liberate themselves. Over four decades ago, the life of farmers in Kaira District was very much like that of his counterpart anywhere else in India. Its income was desired almost entirely from seasonal crops. The income from milch buffalo’s was undependable. The marketing and distribution system for Milk was controlled by private traders and middlemen. As milk is perishable, farmers were compelled to sell it for whatever they were offered. Often, they had to sell cream and ghee at throw away prices. In this situation, the one who gained was the private trader. Gradually, the realisation dawned on the farmers that the exploitation by the trader could be checked only if marketed their milk themselves. In order to do that they needed to form some sort of an
organisation. This realization is what led to the establishment of the Kaira District Co-Operative Milk Producers Union Limited. (Popularly known as Amul) which was formally registered on December 14, 1946.

3.13 DAIRY DEVELOPMENT PROGRAMMES IN INDIA

Milk has emerged as the second largest agricultural commodity next to rice production (1988-89). India ranks world first in milk production in 1996. India’s milk production is 70 million tonnes. Cross breeding of indigenous cows with exotic bulls/semen has encouraged for augmenting milk production.

Government Project / Programme:
1. All India key Village Scheme – 1951
4. IDA Assisted Dairy Projects.

3.14 COOPERATIVE MOVEMENT IN DIARY INDUSTRY

Before Independence there is no system of organised milk collection and distribution. Which had major effect both on the milk Producers as well as milk consumers on November 15th 1945. Aarey milk colony was established by Bombay Government under greater Bombay milk scheme. This is the first scheme in India which benefited partly milk Producers and milk consumers. In 1946 the farmers of Karia Districts of Gujarat State has realised that they were exploited and had no choice but to sell their product (milk) at throw away price to the government approved contractors. The trade was monopolized by contractors operating in Districts. The farmers approached Vallabhbhai Patel at his advice, decided to market their milk through the Co-Operative Shri Morarji Desai one of the lieutenants of Sardar, moved the farmers to established Village Co-Operatives.
Subsequently at a meeting held at Samarkha Village on January 4th 1946, it was resolved that the milk cooperatives could be organised. It was also decided that the government should arrange to buy their milk which could be processed at the dairy owned by the Union. And in case it was not acceptable to the government the farmers would refuse to sell milk to any agency.

The government turned down this proposal and farmers went on ‘Milk Strike’ which lasted 15 days. During this fortnight not a single drop of milk reached Bombay from Anand and the greater Bombay milk scheme virtually collapsed. The milk commissioner of Bombay then visited Anand and after assessing the situation accepted the farmers demand. This marked the beginning of Kaira Districts milk Producers Ltd Union on October 26th 1946.

Ist milk Co-Operative Society formed in Hadgud Village! and on the same day Ist milk collection by Kaira Districts Co-Operative milk Producers Union Ltd was started on 14-12-1946. Amul Union was “registered on 1-06-1948 milk processing unit.

3.15 INDIA : WORLD’S LARGEST MILK PRODUCER :

India has became the World’s No. 1 Milk producing country, with output in 1999-2000 (Marketing year ending 2000) forecasted at 78 million tonnes. United States were milk production is anticipated to grow only marginally at 71 million tonnes occupied the top spot till 1997. India’s milk production was on par near to the U.S. at 71 million tonnes. The world milk production in 1998 at 557 million tonnes, would continue the steady progress in recent years (see table 1.8). Further more, the annual rate of growth in milk production in India is between 5 – 6 percent against the worlds at 1 percent. The step rise in the growth pattern has been attributed to a sustainable expansion in domestic demand, although per capita consumption is modest at 70 kg. of milk equivalent.

India’s annual milk production has more than trebled in the last 40 years, rising from 21 million tonnes in 1968 to an anticipated 80 million tonnes in 2001. This rapid growth and modernization is largely credited to the
contribution of Dairy Co-Operatives, under the operation Flood (OF) Project, assisted by many multi-lateral agencies including the European Union, the World Bank FAO and WFPC (World Food Program). In the India context of poverty and malnutrition. Milk has a special role to play for its many nutritional advantages as well as providing supplementary income to some 70 million farmers in over 5,00,000 remote villages.

3.16 DAIRY DEVELOPMENT IN MAHARASHTRA:

The development of organised dairies in Maharashtra started with the establishment of the Government Milk Scheme in Mumbai by the State Government in 1947. However, this dairy could not satisfy the increasing demand for milk in Mumbai and other fast growing cities in Maharashtra. The Government, therefore, encouraged dairy Co-Operatives at the Village level with the objective of not only increasing the supply of milk, but also to provide the farmers with an additional source of income.

Primary Milk Producers Co-Operative Societies were formed at the Village level. These Societies supply milk to the taluka level or Districts Unions, some of which process and market the milk, whereas some of the milk collected is supplied to the Government Milk Schemes in different districts. During the last 40 years, the State Government has actively encouraged the development of dairies in the State. A separate Dairy Development was set up in 1958 and all the activities pertaining to the development of dairying, including the Bombay Milk Scheme, were put under the Diary. The new department organised a number of milk schemes called the Government Milk Schemes to assist in the collection and processing of milk produced by milk Producers and its distribution at reasonable rates to consumers in urban areas. Thus, the Government has assumed the responsibility of marketing the produced milk at assured price throughout the year has also provided services like artificial insemination, veterinary services and setting up of processing facilities to enable preservation and marketing of milk.
The Central and State Governments, banks and other financial institutions have enabled a large number of small and marginal farmers and landless labourers to buy milch animals in order to supplement their source of income. Many of these small farmers have come together to form Primary Milk Producers Co-Operative Societies (henceforth referred to as Milk Co-Operatives). The number of Milk Co-Operatives in Maharashtra was 20,834 with a total of 14.95 lakh milk Producer members in March 1997. The Milk Co-Operatives supply milk to the Milk Producers Co-Operative Unions (henceforth referred to as Dairy Co-Operatives), which operate the dairy plants, chilling centres and milk processing units. Some Dairy Co-Operatives market their milk and milk products, while some supply the milk to the GMS. Thus the development of dairies in both the public and Co-Operative sectors in Maharashtra is due to the efforts of the State Government.

Maharashtra is one of the major States in India. It is the third largest State in area and population. Maharashtra enjoys the place of price in the national pursuit of milk “White Revolution”. The Commandable work has been carried out by the Milk Co-Operatives in the several states, studies have shown that the Milk Co-Operatives have the potentialities of going a long way in preparing the economic and social handicaps of the farmers with this view. Government of Maharashtra has paid special attention and made financial provisions such as greats, subsidies and share Capital for the Milk Co-Operatives. Because of such efforts, the member of primary Milk Co-Operative and Unions in the State have gone up.

Live stock plays an important tune final role in the agricultural economy and therefore, the Animal Husbandry Department of Maharashtra is planning and implementing massive Livestock Programmes in the Maharashtra State. The State Government is being implementing various schemes Livestock Sector is a powerful tool for sustenance of millions of poor worldwide who otherwise becomes a victim of monsoon vagaries. Village economy and its development are based on its natural resources and their successful management by the Village community for production. Natural resource
management has to be the key pin for an effective strategy for rural development. Live stork has been seen always a subsidiary of agriculture rather as a separate entity therefore failure in one will always affects the others.

The State has a total area of 308 HA out of which 178.76 lakh ha is net sown area and the cropping intensity is 123 percent. Maharashtra is the leading State in the co-op movement. At present there are 101 Tehsils and zillha Co-Operative Dudhsanghs in Maharashtra. It is estimated that Maharashtra has over 145 lakh milch animals comprising of over 90 lakh cows and 55 lakh buffaloes. Today the production of milk in Maharashtra is nearly 62 lakh liters per day. The Maharashtra State has played a crucial role in milk production in the country.

Before 1960 private sector plays a dominant role in dairy industry of Maharashtra. Only after 1960, when a new Maharashtra State was formed then that time Shri. Y.B. Chavan, Chief Minister of Maharashtra encouraged development of milk industry in Co-Operative sector. Financial assistance and incentives were specially allotted in states plan programmes. Special medical facilities, financial assistance has given in rural Maharashtra to develop dairy Industry. In the last 45 years the significant strides have been made in milk production in Co-Operative dairy sector. The development of organised dairies in Maharashtra started with the Government milk scheme in Mumbai by the State Government in 1947. How were, this dairy could not satisfy the interesting demand for milk in Mumbai and other fast growing cities in Maharashtra. The Government, therefore encouraged dairy Co-Operatives at the Village level with the objective not only increasing the supply of milk but also to provide the farmers with additional source of income. Primary milk Producers Co-Operative Societies were formed at the Village level. There Societies supply milk to the taluka level or Districts Unions, Some of which process and market the milk, where us some of the milk collected is supplies to the Government milk schemes in different districts.
During the last 50 years the State Government has actively encouraged the development of dairies in the State. A separate Dairy Development Department was set up in 1958 and all the activities pertaining to the development of dairying including the Bombay milk scheme, were put under the Dairy Development Commissioner, subject to the overall direction and control of the Department of Agriculture. The new department organised a number of milk schemes called the Government Milk Schemes to assist in the Collection and processing of milk produced by milk producers and its distribution at reasonable rates to consumers in urban areas.

Thus, the Government has assumed the responsibility at marketing the produced milk at assured prices throughout the year and has also provided services like artificial insemination, veterinary services and setting up of processing facilities to enable preservation and marketing of milk.

The central and State Governments, banks and other financial institutions have enabled a large number of small and marginal farmers and landlers labourers to buy milk animals in order to supplement their source of income. Many of these small farmers have come together to form primary milk Producers Co-Operative Societies (i.e. Milk Co-Operatives). The number of Milk Co-Operatives in Maharashtra was 20,834 with a total of 14.95 lakh milk Producer members in March 1997. The Milk Co-Operatives supply milk to the milk Producers Co-Operatives Unions, which operate the dairy plants, chilling centres and milk processing units. Some dairy Co-Operatives market their milk and milk products, while some supply the milk to the Gms. Thus, the development at dairies in both the public and Co-Operatives sector in Maharashtra is due to the efforts of the State Government.

There are several large dairies in the private sector. It has been observed that these private dairies are able to get fair returns on their investments where as some of the Co-Operative are incurring losses in-spite of Government support. In Mumbai (Maharashtra) Milk Scheme took place in 1947. The buffaloes in Mumbai city were moved in Array at 1951. Since then, array milk colony is well known to all. Basic provisions were made for the milk
production by the Government. In the beginning it was a binding for milk producer to give all the milk to Aarey milk Colony. But the milk was not sufficient to complete the need of Mumbai city. So the milk was supplied to Mumbai from Gujrat. Therefore, in 1958, the Government of Maharashtra started department of milk. The department also established the market for produced milk in rural areas, which provided a supplementary business for rural population Government milk scheme were started in various districts for enhanced milk production in rural areas. The objective behind activity was to provide market for produced milk and provide the cost based milk price to the milk Producers. Gradually, chilling centers and Government milk services were established in all districts of Maharashtra. But the supply of milk was not sufficient, so, toned milk and double toned milk come in the market. Skimmed milk powder was supplied to Mumbai milk Scheme.

Due to the increasing need for supply of quality milk and whole milk to Mumbai and other part of Maharashtra, the Government adopted a policy for the milk business in Maharashtra. According to the policy, the primary Milk Co-Operatives were established in rural areas. The Societies were procuring milk from milk producer and sending it to Talukas and Districts level Co-Operative Unions. In beginning Government milk schemes received the milk from Unions. Government Milk Schemes supplied the milk to various parts of the districts. The best of milk was sent to Mumbai. But now Taluka and districts Co-Operative Unions are supplying milk in the Districts and rest of milk is supplied to Mumbai milk scheme and Maharashtra State Co-Operative Milk Federation (Maharashtra Diary).

Maharashtra also accepted the National Diary development Board Scheme (NDDB) of Operation Flood Scheme in 1971. The 1\textsuperscript{st} Phase dairy development was started in 1971 to 1980, 2\textsuperscript{nd} phase from 1981 to 1985 and 3\textsuperscript{rd} phase from 1980 to 1996. In the second phase Government milk schemes in some districts were handed over to Districts was milk Unions from 31 March 1996 Operation Flood Scheme was withdrawn from Maharashtra by the NDDB.
3.17 List of Dairy Co-Operative Unions in the Maharashtra State

Maharashtra Milk Co Operatives

- Adivasi Taluka Dudh Utpadak Va Krishipurak Udyog Sahakari Sangh, Dhule.
- Amravati Zilha Sahakari Dudh Utpadak Sahakari Sangh Maryadit, Amravati.
- Amruttsagar Sahakari Dudh Vyavsayik Sangh Maryadit, Akola.
- Baramati Taluka Sahakari Dudh Utpadak Sangh Ltd, Baramati.
Beed Zilla Madhyavarti Sahakari Dudh Utpadak Va Purvatha Sangh Maryadit, Beed

Bhandara Dist Coop Milk Producer’s Union Ltd, Bhandara.

Bhoom Taluka Sahakari Dudh Utpadak Va Purvatha Sangh Maryadit, Bhoom


Chandrapur Zilla Dudh Utpadak Sahakari Sangh Maryadit, Chandrapur.

Dhule Taluka Dudh Utpadak Krishipurak Udyog Sahakari Sangh Ltd, Dhule.


Jalna Zilla Dudh Utpadak Sahakari Sangh Ltd, Jalna.

Jawli Taluka Sahakari Dudh Purvatha Sangh Ltd, Medha.

Kej Taluka Sundar Sahakari Dudh Vyavasaik Purvatha Sangh Ltd, Kej, Dist. Dhule.


Krishna Khore Sahakari Dudh Utpadak Va Purvatha Sangh Ltd, Miraj.

Krishna Valley Sahakari Dudh Purvatha Sangh Ltd, Wai.


Nagpur Zilha Nootan Dudh Utpadak Sahakari Sangh Maryadit, Nagpur.

Nanded Zilha Sahakari Dudh Utpadak Sangh Maryadit, Nanded.

Nasik Dist Coop Milk Producers” Union Ltd, Nasik.

Patoda Taluka Dudh Vyavasaik Sansthan Dudh Utpadak Va Purvatha Sangh Maryadit, Patoda.

Phalton Taluka Sahakari Dudh Purvatha Sangh Ltd, Satara.


Rajarambapu Patil Sahakari Dudh Sangh Maryadit, Islampur.


Shahada Taluka Dudh Utpadak Va Krishipurak Udyog Sahakari Sangh Ltd, Shahada.


Shindkheda Taluka Dhudh Utpadak Krishipurak Udhyog Sahakari Sangh Ltd, Dondaicha.

Shirpur Taluka Dudh Utpadak Va Krishipurak Udyog Sahakari Sangh Ltd, Shirpur.


Shri Hanuman Sahakari Dudh Vyavsayik & Krishipurak sewa Sanstha Maryadit, Yalgud.

Shri Vasant Dada Dudh Vyavsay Vikas Zilha Sahakari Sangh Maryadit, Tasagaon.


Vani Vibhagiya Sahakari Dudh Utpadak Sangh Ltd, Dindori.

Wardha Zilha Sahakari Dudh Utpadak Sangh Maryadit, Wardha.


3.18  A BRIEF NOTE ABOUT KOLHAPUR ZILLA SAHAKARI DUDH UTP. SANGH LTD., KOLHAPUR (GOKUL DUDH)

Kolhapur Zilla Sahakari Dudh Utpadak Sangh Ltd., a Co-operative organization that is radically known for its most prominent brand ‘Gokul’ which makes the day of millions of Indians early in the morning. It is the brand which remains one of the most cherished and delightful... whose every drop in itself is an authentic evidence of impeccable taste, highest purity and unmatched quality. The brand GOKUL made its foray on 16\textsuperscript{th} March 1963 through a small beginning with milk collection of 500 liters of 22 societies, but envisioned immense vigor, enthusiasm and striking speed for growth.

Activities gathered momentum when in the year 1978- the National Dairy Development Board included ‘Gokul’ under its ambitious ‘Operation flood’ program. This led to a full fledged commissioning of ‘Gokul’ own plant at Gokulshirgaon, Kolhapur in the year 1985. Kolhapur Zilla Sahakari Dudh Utpadak Sangh Ltd. with the introduction of its popular brand ‘Gokul Milk’ and its wide range of milk products into the market then achieved many landmarks in Milk Procurement, Extension, Animal Health, Breeding, Milk Processing, and Product making and Marketing.

At present Gokul has 7 Lakh Liters/day capacity dairy plant with four owned & one hired chilling centers, having 4.25 Lakh Liters/day milk handling capacity and modern packing Unit at Navi Mumbai. For milk production
enhancement in Milk shed they have presently 40 Mobile clinics, 406 cluster & 17 static A.I. centers, own Cattle Feed Plant of 200 Capacity at Gadmudshingi and A state-of-the-art 300 MT/day capacity Cattle Feed Plant expandable to 500 MT/day capacity at Kagal-Hatkanangale five Star MIDC with popular ‘Mahalaxmi’ brand.

**Objectives**

1. Development of infrastructure for procurement of milk in rural areas and offer the best remunerative prices.
2. To meet the growing needs of milk & bi-products for the masses.
3. Organize the co-operative structure of milk producers at the village level.
4. Feed and fodder production and implement an intensive breeding program for milch animals to increase milk production.
5. Imparting various training programs at rural level.
6. Running Co-operative cell to increase awareness and women participation for better management.

**Mission**

- Achieve sustained growth
- Understanding customer needs and protecting their interest to build lifelong relationship and brand loyalty.
- Development of indigenous products, constant research, innovative planning and processes adoptive technologies and optimal resource utilization.
- Stay at the forefront of technology and management through scientific innovations and creative management approaches.

**Philosophy**

- To become leaders in the dairy, while retaining our Indian traditional and family values.
- Be the first choice for consumers.
Give Gokul customers value for money. This will be through improvement in technologies used in Gokul dairies, thus enhancing the quality of raw material, our internal processes and the competencies of people.

Productivity enhancement of animals through genetic development programmes, where by, the farmers will also be benefited.

Provide Gokul customers with cleanest and healthiest milk, for which focus on nutrition starts from the animals themselves, thus leading to more nutritional milk and milk products.

From farming to pharma --- broaden the natural functional applications of milk and milk products, by targeting medicinal organoleptic, and other pharmaceutical and therapeutically functional values.

Seamless flow of data from the plant floor to the board room, facilitating inform and immediate decision making. Transformation of this data in to useful domain knowledge, and sharing the domain knowledge obtained back the plant floor for employees’ development.

Preserve and show case our agriculture heritage and protect local economy interests including the development and education of our rural communities.

Maintain sensitivity to environment.

Be a preferred employer in our field, and provide an environment that challenges our employees to learn, grow and prosper in an atmosphere of respect and recognition. Our employees shall be proud to be a part of the 'Gokul Family'.

Milk Procurement

Gokul is associated with almost 5,86,000 milk producers in and around Kolhapur district. Milk is collected from 4803 dairy co-operative societies with 255 milk collection routes. At present average milk procurement per day is 6.24 lakhs liters. The ration of Buffalo & cow milk is 67:33% respectively. The average Fat & SNF of buffalo milk is 7.4 & 9.4% and that of Cow milk is 4.2
& 8.5%. The peak procurement in a day during the year is 7.73 lakh liters and that of lean procurement is 4.71 lakh. The total sourage of milk is only 0.11%

To increase milk production and quality of milk, different prizes are given to primary DCS by Union which are as below.

- To DCS giving maximum milk to union. (Buffalo And Cow Milk)
- To DCS giving high quality milk.
- To DCS giving maximum Buffalo milk to Union.
- To women DCS giving maximum Buffalo/Cow milk to Union.
- Gokul Shree Award - Buffalo & Cow producing maximum milk during single day.

Milk quality is going to be determined by bacterial count in near future. In order to have good quality milk, cold chain needs to be maintained from village level society to consumer door step. Gokul has initiated implementation bulk milk coolers at village societies at one of its milk collection route.

**Products**

Gokul milk Union’s products with its brand name ‘Gokul’ are most popular in the market due to its consistent quality & taste. The liquid milk product range includes Full Cream Milk, Cow Milk, Toned Milk and Double Toned Milk. The milk products range includes Skimmed Milk Powder, White Butter, Ghee, Shrikhand, Mango Shrikhand, Cooing Butter, Table Butter, Paneer, Cream, Dahi & Lassi.

Union has exported its products to Middle East, Europe, Turkey, Egypt & Asian countries.

Prosperity and Progress lies in our consistent quality of products with perseverance and dedication.

**Cattle Feed Plant**

To meet the nutritional requirement of animals, our Union has established 100 MT/day capacity cattle feed plant during year 1982 under
Operation Flood scheme. The plant capacity was expanded to 200 MT during 1992.

Due to need based demand from the milk producers, Gokul have introduced different types of cattle feed products under "Mahalaxmi" brand name, such as Supreme Pellet, Gold Pellet, Milk Replacer, Calf Starter & Nutrient.

To cater the increasing demand of cattle feed within the milk shed, the existing plant capacity is found insufficient. Thus, milk Union has started setting technologically advanced 300-500 M.T./day capacity Cattle Feed Plant at Kagal-Hatkanangle Five Star MIDC, Dist. Kolhapur, with the help of NDDB. The commercial production has started.

**Information Technology Services**

Use of information technology for office automation and decision making plays vital role at Gokul. Most of the work is done through computers. Presently the applications are developed internally and are tuned to requirements. Gokul Union has planned to integrate all its centers & branches with head office under the concept of ERP in couple of years. The structured network will be established across the head office campus & all the branches. Data generated will be trapped from entry point for all the functions to form more rigid, integrated decision making system.

**Animal Husbandry Services**

**Animal Health**

Gokul Union renders extension services, viz., breeding, feeding, management & also health care of the cows & buffaloes. These services are helpful for enhancing productivity & quality of the milk. Gokul Union provides services for animal health through 40 mobile veterinary clinics with a team of 55 qualified and experienced veterinarians. These services are available for round clock at the farmer’s door step.
De-worming programme and Vaccination

De-worming programme is carried out to eradicate worms in dairy production. The purpose is to improve production and health of dairy animals. De-worming medicines are provided on subsidized rates. As a preventive major, animals are vaccinated against Foot & Mouth Disease and HS+BQ Diseases.

Artificial Insemination Services & Infertility Camps

An artificial insemination (AI) is required to improve genetic characters of the animals i.e. cross breeding for enhancing the milk production. Infertility Camps are organized as pre the demands of DCS, where free checkup and treatment are carried out to rule out the cause of infertility by expert veterinarians.

Calf Rearing

Aims & Objectives:

- Rearing upgraded female calves at the farmer’s doorstep.
- To minimize initial three months feeding expenses of the calf by using 'Milk Replacer & Calf Starter'.
- To monitor the health of the calf through the Union's Doctors to improve the maturity age & productivity life of the calf.
- To motivate the farmers to bring the young female calves to the age of maturity and subsequently produce more quantity of milk by providing them incentives by way of subsidy.

Features of the program:
- The Pedigreed Registered Heifer gets Pregnant receives subsidy as follows:

<table>
<thead>
<tr>
<th>Animal</th>
<th>Pregnancy Confirmation Period</th>
<th>Subsidy / Incentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cow</td>
<td>1) Up to 22 months</td>
<td>3000</td>
</tr>
<tr>
<td></td>
<td>2) Between 23 to 30 months</td>
<td>2000</td>
</tr>
<tr>
<td></td>
<td>3) IInd Pregnancy</td>
<td>1000</td>
</tr>
<tr>
<td>Buff</td>
<td>1) Up to 40 months</td>
<td>7000</td>
</tr>
<tr>
<td>--------------</td>
<td>-------------------</td>
<td>------</td>
</tr>
<tr>
<td></td>
<td>2) Between 41 to 48 months</td>
<td>3000</td>
</tr>
<tr>
<td></td>
<td>3) IInd Pregnancy</td>
<td>3000</td>
</tr>
<tr>
<td></td>
<td>If pregnancy confirmed within 18 month for cow and 36 months for buffalo, incentive is Rs. (other than above mentioned subsidy)</td>
<td>500</td>
</tr>
</tbody>
</table>

- Farmers have registered total 1,61,663 nos of female calves during the period from Oct. 2005 to Mar. 2012.
- Gokul Union has developed ‘Mahalaxmi Milk Replacer’ & ‘Calf Starter’ to reduce initial three months feeding expenses of the calf. The same has resulted in reducing the feeding cost by 55-60%.
- Palatability, high digestibility and good nutritive value of ‘Mahalaxmi Milk Replacer’ & ‘Calf Starter’, have shown noticeable weight gain in calves.
- Mortality percentage of the calves has been considerably reduced by less than 5% & 15% in cow calves & buffalo calves respectively
- Due to implementation of ‘Calf Rearing Programme’, at farmers doorstep it is expected to have upgraded and crossbred calves which in near future would certainly fetch sustainable long term milk production enhancement in Gokul milk shed.

**Fodder Development**

To increase productivity of animals, nutritious fodder is required & for that Gokul provides season wise improved varieties of fodder seeds & by considering the feasibility of cultivation, Sangh has decided to provide certain fodder seeds on 100% subsidy. Also for increasing palatability & nutritive value of available non-conventional fodder like paddy straw & wheat straw, urea treatments are practiced under our supervision. In addition to this improved multicut grass varieties e.g. CO3, Marvel & also multicut Lucerne seed provided to milk producers. Lucerne is recommended for mix cropping with sugarcane.
Gokul Union provides indigenous fodder & chaff cutters for utilizing cultivated fodder & also to minimize the losses of fodder. Gokul Union also prorogates silo pits/silage for enhancing keeping quality of fodder.

**Gokul Gram Vikas Yojana (A Community Development Program)**

‘Gokul Gram Vikas Yojana’ is a community development programme especially designed to educate milk producers, Primary DCS staff, DCS management committee members and dairy leaders. This programme is designed to educate all the members at village level with their convenience.

With the help of NDDB this programme was started as cooperative development programme during 1989 and is now been identified as ‘Gokul Gram Vikas Yojana’. Under this programme, every village will indeed get vital infrastructure of basic amenities. At the same time a purposeful planning has also been made to ensure that each village becomes clean and beautiful. As a result, a balanced development will take place in a uniformed manner.

**Women Dairy Co-operative Leadership Development Program**

More energy and time of rural women are spent in the task related to dairy husbandry & milk production. Women are actual users of the dairy co-operatives. They should be encouraged to became members and share the responsibilities of managing the dairy cooperatives. Keeping in mind inherent potential of the rural women in the creation of vibrant & successful dairy cooperatives Gokul Union formulated suitable programme with the guidance of NDDB to promote women’s involvement & their participation through Dairy Cooperatives.

**Milko Testers**

Milko Tester is a device, which electronically determines the Fat % rapidly in milk. Milko Tester is used at primary dairy co-operative level in villages. The milk supplied by producer is tested before acceptance and payment is made on the basis of milk quality. This helps to receive good quality milk at primary dairy co-operative as well as at Union level. The
transparent process results in strengthening faith of milk producer on Village Society and Union.

Gokul Union provides free of cost chemical and sachet powder for testing fat. Union has distributed 4852 Milko Testers and 236 Fatomatic machine to primary societies by giving subsidies up to Mar. 2012. The repair & maintenance of machine is done in-house. The free of cost service is provided from 18 service centers however the spares cost will be deducted from society milk bill.

Training Center

The training center established in assistance with NDDB under the Operation Food Programme and started functioning from 1984. Now a day dairy is viewed as primary business. Many private players are also entered into business. The consumer is more cautious about food safety. In order to educate on different areas of milk business, sangh has arranged various need based training program to milk producer, society employees, and committee members. The various trainings help farmers and societies to increase the confidence level and make their business more profitable.

Awards & Certifications

Activities at Gokul are always towards giving best quality and taste to consumer by effective resource utilization and keeping best hygiene practices. The plant has been awarded 14 times in dairy & animal feed processing segment since 1994-95 by National Productivity Council of India.

The union has implemented IS/ISO 22000:2005 & IS/ISO :9001:2008 practices to adopt for best quality management & food safety system. The union also received the license from Export Council of India to export the products. Recently a patent for ‘Milk Replacer’ for calves has been awarded to Union by Government of India.
‘KISAN’ Insurance Package Scheme

Gokul Union and the Oriental Insurance Co. Ltd., Kolhapur branch, have implemented jointly ‘KISAN’ Insurance Package Scheme, for the milk producers of Kolhapur district since 9th November 2009. The main object of this scheme is to provide maximum benefits to the insured with minimum premium. The risk area covers destruction of residential house, house articles, agricultural produce, biogas, two milch animals, two bullocks, electric motor etc. of the milk producer due to fire, earthquake, flood and cyclone in addition to accidental risk coverage for the milk producer and his/her spouse. Accidental risk covers death, permanent disability and hospitalization expenses. The amount of yearly premium is fixed at Rs.450/-. This amount of premium is paid to the Insurance Company at once by Our Kolhapur Milk Union, and later on it is recovered by the Union in 10 equal installments through concerned dairy co-operative society. Total coverage is about 6.5 lakhs.

Provident Fund Scheme for Milk Producers:

This is the only “one of its kind” Scheme introduced by our Union. In order to take care of the milk producers in their old age, our Union has introduced novel Provident Fund Schemes during year 2005.

Scheme A: Under the Scheme, for every liter of milk collected by our Union, 15 paise per liter would be contributed by the milk producer, 10 paise per liter by village level Dairy Cooperative and 15 paise per liter by the Union, making a total contribution of 40 paise per liter. The milk producer, after attaining the age of 60 years could withdraw the amount accumulated in her/his account with interest. The scheme would give financial security to the milk Producers and would come handy at the old age.

Scheme B: Under the Scheme, for every liter of milk collected by our Union, 10 paise per liter would be contributed by the milk producer and 10 paise per liter by the Union, making a total contribution of 20 paise per liter.
Total 15,000 farmers through 100 primary dairy co-operatives have accepted this scheme. The amount of Rs.145 Lakhs has been accumulated on this account which has been invested in the Kolhapur District Central Coop. Bank. 
(Note – Figures shown are of year 2011-2012)

The Power of Indian Dairy Farmers

In spite of being a subsidiary occupation, Dairying in India not only provides opportunity for employment and livelihood for millions of rural people through daily milk payments, but it also improves the quality of life. Market power of dairy farmers through the co-operatives makes this happen.

3.19 Warana Dairy:

The 'Warana Dairy', one of the successful co-operative dairy, was established in 1968, with the noble purpose of providing an additional source of income to the farmers from the surrounding villages turnover of Rs. 400 crores per annum. ISO 9001-2000 & H.A.C.C.P. Food Safety Certificate. Plant of milk processing with the capacity of 10 lac litres per day.

It is one of the most hygienic plant. Along with Warana Shrikhand- an indigenous Indian sweet,' Warana Milk Powder, UHT Milk in Tetra Pak. Produced in a quantity of 65 metric tonnes per day, it is exported to gulf nations like Kuwait, Saudi Arabia and Sharjah, African Countries, Bangladesh, China. Warana Shrikhand has set a record of highest selling in
India. It's also one of the most popular products in Maharashtra. All this stands as a solid proof of the Warana's quality. Soon, these products will be exported to European countries, US, UK, Russia, South Africa and Bahrain. The dairy produces various Milk & Milk products like UHT Tertra Pak Milk, Pasteurized Milk, Milk Powder, Shrikhand, Ghee, Butter, Cheese, Paneer, Chhass, Dahi, Lassi and many more. The Warana Dairy is now all set to enter the European market with its wide range of quality products.

**The Success Story**

The 'Warana Dairy', one of the successful co-operative dairy, was established in 1968, with the noble purpose of providing an additional source of income to the farmers from the surrounding villages. This revolutionary movement has crossed the turnover of Rs. 400 crores per annum. The dairy has already acquired the ISO 9001-2000 & H.A.C.C.P. Food Safety Certificate. In addition to this, Warana Dairy houses a plant of milk processing with the capacity of 10 lac litres per day. It is one of the most hygienic plant. Along with Warana Shrikhand—an indigenous Indian sweet,' Warana Milk Powder, UHT Milk in Tetra Pak, Produced in a quantity of 65 metric tonnes per day, it is exported to gulf nations like Kuwait, Saudi Arabia and Sharjah, African Countries, Bangladesh, China. Warana Shrikhand has set a record of highest selling in India. It's also one of the most popular products in Maharashtra. All this stands as a solid proof of the Warana's quality. Soon, these products will be exported to European countries, US, UK, Russia, South Africa and Bahrain. The dairy produces various Milk & Milk products like UHT Tertra Pak Milk, Pasteurized Milk, Milk Powder, Shrikhand, Ghee, Butter, Cheese, Paneer, Chhass, Dahi, Lassi and many more. The Warana Dairy is now all set to enter the European market with its wide range of quality products.
A movement called Warana was started by a visionary called Tatyasaheb Kore in 1951, with the establishment of a sugar factory. Initiated for the cause of the economic upliftment of the poor farmers, it soon metamorphosed into a nationwide movement, contributing immensely to the national economy.

Setting a landmark in the field of rural co-operative industry, today, the movement has gathered a momentum and has proved to be a precious asset to the economic progress of the nation. His quotes were that of a visionary...

The success story of Warana was destined to continue through the young and able hands of his grandson, Shri. Vinay Kore.

Endowed with an undying positive approach and great optimism, he successfully leads the forward march of Warana Group. He has also developed WAGPCOS into a 100% EOU in fruit processing of banana, guava, mango pulp and puree. His vision of Warana is well-

"I have always dreamt of a stronger India; where every farmer is self-sufficient, financially sound and happy....for he is the backbone of the national economy and in his well being lies the welfare of the nation."

"70% of Indian economy thrives on agriculture. It's the proper blend of agriculture and the latest technology that would put India on the path of progress. At Warana, we strive hard to achieve this goal."
Shri. C.N. Gulave, Managing Director, has played a massive role in contributing to Warana Dairy's stupendous success. In his words, "With a sound infrastructure to support us, now our eyes are set on the international market. To achieve this, we maintain a strict, uncompromising adherence to quality".

**Fruit Pulp Unit**

Fruit Pulp Processing Unit is involved in the production of export quality pulps and purees of Mango, Banana, Guava, Papaya etc. The fruits are grown in and around Warana with the help of tissue culture plants. Fruit Pulp Unit is the first project in the co-operative sector, financed by the Credit Bank, Belgium, N.V. Fruit Pulp Processing Unit has the processing capacity of 100-110 MT of fruits per day. It is the most professionally managed unit of Warana Group, It has acquired the status of 100% export unit. The main products of Fruit Pulp Unit that are exported all over the world comprise purees of Alphanso & Totapuri Mango, Banana & Guavas.
Fruit Pulp Unit has a unique PLC controlled automatic continuous processing plant machinery from Cherry Burrell, USA.
Fruit Pulp Unit has the best technical know how from Chemical and Industrials Engineering Inc., USA. Fruit Pulp Unit has the state-of-the-art laboratory designed and maintained keeping in mind the international standards and norms. The emphasis on technology, quality control techniques and hygiene backed with qualified & highly experienced personnel ensure production of the finest quality. All this has made 'Warana' synonymous with quality.

Fruit Pulp Unit has a unique PLC controlled automatic continuous processing plant machinery from Cherry Burrell, USA.

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Composition</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Milk Fat</td>
<td>Min. 80 %</td>
</tr>
<tr>
<td>2.</td>
<td>Moisture</td>
<td>16-18%</td>
</tr>
<tr>
<td>3.</td>
<td>Salt</td>
<td>2.5%</td>
</tr>
</tbody>
</table>
Available in - 100 gm., 500 gm. in duplex, 9.1 gms chiplet & in 500 gm. Butter Paper for institutional sale. 20 kg block for large volume users.

**Shreekhand**

**Shrikhand** - the unbeatable delicacy in three detectable flavours. *Amrakhand, Badam-Pista, Kesar-Elaichi.* With its smooth and soft appeal and appetizing look, this Indian delicacy rules every Indian pallet. With its roots in the royal tradition, no Indian festival can be complete without its presence.

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**Butter**

Warana offers premium quality salted & unsalted butter made from fresh cream. Spread a spoonful of golden yellow Warana Butter on the crisp toast for breakfast and experience the sunrise straight in your heart! Exquisite taste with any dish, making it double yummy. Manufactured from pasteurized cow/buffalo cream

Available in - 100 gm., 500 gm. in duplex, 9.1 gms chiplet & in 500 gm. Butter Paper for institutional sale. 20 kg block for large volume users.

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</tr>
</tbody>
</table>
WARANA CHHAS: Pure and cool Warana Chhass is excellent to refresh your body anytime...anywhere. Also have a great nutritional value for healthy life. Now-a-days Warana Chhass is become good alternative for soft drinks. When you drink once....you will drinks forever. So... take a sip., and feel the difference! Warana Chhass is available in two chitchat tastes... Masala and Plain.

WARANA DAHI: Pure and sure Warana Dahi...have wonderful nutritional value beyond your imagination . Warana Dahi is now...special identity of healthy kitchen and perfect dinner. After every spicy meal.... Warana Dahi....always makes you fresher and healthier. Purity of Warana and Freshness of nature ...give pure Warana Dahi..A wonderful combination of Warana..!

WARANA LASSI:Tasty... Creamy.. Chilled drink makes you cool'n cool & give fresh taste of nature in different way. Traditional Indian Punjabi drink in excellent way to refresh your mind .

<table>
<thead>
<tr>
<th>No</th>
<th>Available in</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Dahi</td>
<td>100gm., 200gm., 400gm</td>
</tr>
<tr>
<td>2</td>
<td>Lassi</td>
<td>200ml. Poly Pack</td>
</tr>
<tr>
<td>3</td>
<td>Chhas</td>
<td>200ml, 500ml</td>
</tr>
</tbody>
</table>
Warana Processed Cheese: Try it with any 'cheej' and it would never taste the same! It's a perfect blend of naturally ripened cheese, fresh cheddar and other cheese varieties. So, if you want to digest the happiness mantra, just say, 'Warana Cheese' or better still, eat it!

No. Available in
1 Poly Pack: 200ml., 500ml. & 1 Liter
2 Duplex Pack 200ml., 500ml
3 Tin Pack 1 liter, 15 liters
4

**Paneer**

Fall prey to the white magic of the soft yet taut, ready to melt in mouth pieces of Paneer. Just cook up an excuse to add those hard to resist cubes to every possible dish. Paneer Tikka, Paneer Masala, Paneer Bhurji.... start off the Paneer Festival. With those

<table>
<thead>
<tr>
<th>Sr.</th>
<th>Parameters</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Moisture</td>
<td>Max. 65%</td>
</tr>
<tr>
<td>2</td>
<td>Fat(on dry basis)</td>
<td>Max. 50%</td>
</tr>
</tbody>
</table>

**Fruit Jam**

**Warana Processed Cheese:** Try it with any 'cheej' and it would never taste the same! It's a perfect blend of naturally ripened cheese, fresh cheddar and other cheese varieties. So, if you want to digest the happiness mantra, just say, 'Warana Cheese' or better still, eat it!

No. Available in
1 Glass Bottle 200 gm. 400 gm.
2 Plastic Jar 4 Kg
**Flaverd Milk**

Remembrance of fruits & satisfaction of taste you get many fresh flavours of fruits pulps in Warana's Fresh Fruit Drink. Warana Flavoured Milk Just sip for joyful morning, hot afternoon, cool evening or lazy night. Available in different flavours (Chocolate, Ice-cream Soda, Milk Masala, Butter Scotch.)

<table>
<thead>
<tr>
<th>No</th>
<th>Available in</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Flaverd Milk</td>
<td>200ml</td>
</tr>
<tr>
<td>2</td>
<td>Fruit Drinks</td>
<td>250ml</td>
</tr>
</tbody>
</table>

**Milk Powder**

Warana present two type of milk powder

- Skimmed milk powder.
- Full cream milk powder.

Just a spoonful of Warana Skimmed Milk Powder is enough to transform a glassful of water into rich, creamy and wholesome milk that's high, nutritious and enriched with proteins and carbohydrates. The taste of purity lingers all the way.

<table>
<thead>
<tr>
<th>No.</th>
<th>Available in</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Poly Pack:</td>
<td>100gm., 500gm. &amp; 1 Kg</td>
</tr>
<tr>
<td>2</td>
<td>Craft paper Bag</td>
<td>25Kg</td>
</tr>
</tbody>
</table>

**Tetra Pak UHT Processed Milk**

Now your milk is free from spoiling because Warana has pure milk with tetra pak. You can enjoy the purity for 120 days. It is free from preservatives. It also do not need refrigeration till opened. It has been sterilised at high temperature and nutritious milk having freshness until opened.

PROXIMATE COMPOSITION

<table>
<thead>
<tr>
<th>Serving Size</th>
<th>Serving per pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 ml</td>
<td></td>
</tr>
<tr>
<td>Amount per serving</td>
<td>Toned Milk</td>
</tr>
<tr>
<td>--------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Energy Value</td>
<td>108 Calories</td>
</tr>
<tr>
<td>Protein</td>
<td>6.2 g.</td>
</tr>
<tr>
<td>Carbohydrate</td>
<td>9.4 g.</td>
</tr>
<tr>
<td>Calcium</td>
<td>240 mg.</td>
</tr>
<tr>
<td>Fat</td>
<td>3.0%</td>
</tr>
<tr>
<td>SNF</td>
<td>8.5%</td>
</tr>
</tbody>
</table>

**Operational Area**

The Warana Valley-unfolded an epic of sorts with the establishment of sugar factory along the Warana river area by, TATYASAHEB KORE

A man of great foresight, he realized although the economic condition of the irrigated farmers were up-lifted, the percentage of such farmers was only 15-20%. Further economic development was necessary to cover the dry land farmers, small holders, landless laborers and weaker sections. This leads emergence of one of the country's most successful dairy co-operative.

**SHREE WARANA SAHAKARI (JTPADAK PRAKRIYA SANGH LIMITED, KORENAGAR** was established in the year 1968 by Late Shri. Tatyasaheb Kore with the financial assistance provided by Shareholders and State Government. The object of establishing this dairy was to improve the milk producer's economical, social and educational leave and to provide the employment. This scheme has provided the ready market to the milk producers for sale of mild in the villages through co-operative and on the other hand it provides wholesome, hygienic, good quality, processed milk and milk products to the urban customers at remunerative prices. Since the establishment it is continuously progressing. It has been certified by ISO 9002 and HACCP certification. The milk is procured from about 5 tehsils, which are in milk-shed area. At present nearly 763 societies are functioning.
from 389 villages. The Warana sangh has an elected board of Directors. The plant was expanded in the year 1975, Warana dairy has Five chilling centers at Ganeshwadi, Gandhinglaj, Jath, Mudhol, Solapur, and milk packaging centers at Washi, Gadchinglaj, Mudhol, Solapur. Warana Sangh is popular due to "Shrikhand". In addition to this Butter, Ghee, Table Butter, Lassi, Dahi, Paneer, Cheese, SCM, Milk Powders (SMRWMJDairy Whitner), Tetra Pack Milk and Flavoured Milk are also manufactured here. This dairy is marketing the products under the brand name 'Warana' which has established good impression throughout Maharashtra. It has become benchmark for the products in other milk plants.

**Extension Activities**

**Extension Activities Conducted By the Warana Coop Milk Union.**
Producer is the important or base of the milk business. Warana Coop Milk Union always put him in front while designing training and extension activities. With the purpose of development and expansion of milk business, union tries inventory program techniques and motivational subsidy offers.

**Awards**

The ‘Vasantrao Naik’ excellence award was received by the Dairy in the field of animal husbandry & dairy business twice. (1979, 2006)

The chairman, voice chairman and and Hon. Mr. Vinay Kore (Savkar) receiving this award at the hands of Hon. Mr. Shradraji Pawar (Agriculture minister, India).

Award for the Energy Conservation & Management by MEDA in the Co-operative industrial sector was received by the dairy for the year 2005 as it ranked first. The chairman, voice chairman and Hon. Mr. Vinay Kore (Savkar) receiving this award at the hands of Hon. Scientist Mr. Vasant Govarikar
MISSION:
We educate ourselves continuously in increasing per cattle production of milk as per International standards and transform knowledge and technology to the Dairy Farmers to enable to give better returns to the shareholders.

VISION
To become No.1 Producer & Exporter of quality milk & milk products having International quality standard from India.
References:

- Various Reports on Dairy Development of Government of India,
- Various Annual Reports of National Dairy Development Board.
- Annual reports of Gokul Dairy
- Annual reports of Warana Dairy
- Various websites of Warana and Gokul dairy