CHAPTER 2

EVOLUTION AND DEVELOPMENT OF DAIRY CO-OPERATIVES

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INTRODUCTION

Human being is a social animal and therefore he has to stay within the society. He is bounded with the rules and regulations and customs and traditions prevailing within the society. But the members of the society require some sort of relations and co-operation for their co-existence and livelihood. Similarly, our daily food and drink require somebody else's efforts. The term 'co-operation' is developed and become popular from this philosophy. It has gained a wide acceptance in social and economic activities. In our industrial world also it has very deep roots and branches as one of the forms of business organisation. Dairy co-operatives - milk and milk products businesses - is a prime sector in our country on general and specifically in Gujarat. All the nineteen districts of Gujarat have their respective District Dairy Co-operatives at district level and hundreds of dairies at village levels connected with their co-operative district level unions. Latters provide milk regularly to the formers, and formers after processing it distribute to the needy people in large.

Following table provides some of the data and information regarding the number of co-operatives, total members and collection of milk by dairy co-operatives for the last five years in Gujarat:
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The term `co-operation' and its scope now-a-days become a challenge to the business world. Multi-national corporation is also one type of co-operation between two business units of two different countries. Since, the small store in Toadlane was started in England, the movement has progressed rapidly and a greater appreciation of all the co-operation has led to a wider conception of its principles. Different scholars of this discipline have tried to define it in their own ways. But they failed in giving a complete model acceptable to all in the form of definition and as such some of the definitions cited below may only serve to give an idea about it.

According to the Co-operative Planning Committee of India (1946), "co-operation is a form of organisation in which persons voluntarily associate together on a basis of equality for the promotion of their economic interests. Those who come together have a common economic aim which they cannot achieve by individual isolated action because of the weaknesses of the economic position of a large majority of them. This element of individual weakness is overcome by the pooling of their resources by making self-help effective through mutual aid, and by strengthening the bonds of moral solidarity between them". Then Mr. H. Calvert has defined co-operation as "a form of organisation
wherein persons voluntarily associate together as human beings on a basis of equality for promotion of their economic interest of themselves". Similarly, Mr. M. T. Herrick has also defined co-operation as "the act of persons voluntarily united for utilizing reciprocally their own forces, resources, or both under their mutual management to their common profit or loss".

But insofar as society or unit is concerned, Dr. C.R. Fay tried to define it as "an association for the purpose of joint trading among the weak and conducted always in an unselfish spirit on such terms that all who are prepared to assume the duties of membership may share its rewards in proportion to the degree in which they make use of their association". In addition to this, "co-operative organisation is an association which furnishes an economic service without entrepreneur profit and which is owned and controlled on a substantially equal basis by those for whom the service is being rendered under this system of business all the members assume, in a broad sense, the economic risk but expect no return as profit for the risk element. There may be a nominal or reasonable return on the capital investment, but there is yearning for an additional return on the capital, based upon the potentialities or the successful operation of the society".

The Indian Co-operative Societies Act, 1912 has also defined co-operative society as "a combination of persons which has as its object the promotion of economic interests
of its members in accordance with co-operative principles, so as to bring about better living, better business and better methods of production."

In conclusion, while co-operation is a philosophy regarding attempts to be put together for a particular goal achievement, a co-operative society results into an institution where members of this society take the interest for its growth, development and survival.

Now, here we are concerned specifically with the concept of dairy co-operatives. Following paragraphs would definitely make it clear and the development of dairy co-operatives.

**DEVELOPMENT OF DAIRY CO-OPERATIVES**

The richness of milk as a composite and all-in-one package of nutrients was known from time immemorial India was once known to be the "land of milk and honey". A milk product like ghee is being extensively used both in diet and in religious functions. Milk and milk products are also the only source of quality proteins for the predominantly vegetarian diet. It is time to honour milk in its proper perspective."

Dairy industry in India is therefore, our most ancient industry. Lord Krishna and King Virata also developed the
The concept of dairying in our ancient India. Keeping the livestock have been the integral parts of Indian agriculture. Dairying provides an additional income to farmers and landless labourers. The enactment of Indian Cooperative Society Act, 1912, provided an impetus to put forward the efforts for organising dairy industry and commercialising its products on co-operative lines. At the beginning three different types of dairy co-operatives were established by the consumers, distributors, and producers, but only the producers' co-operative found support and encouragement. Consumers' societies did not make any progress due to their own ownership. Distributors' co-operative societies were started in Madras during early years, but were subsequently liquidated by one or the other reasons. But producers' co-operative societies are most widely prevalent in our country. They are called either milk supply societies or milk producers' societies. This type of society has a greater growth potential. Moreover, since the beginning of the First Five Year Plan the official government policy has been to encourage the producers' organisations in this sector.

The modern concept of dairying states that it is an organised way of producing, processing and marketing of milk and milk products. Organised dairy farming started on a small scale at the end of the nineteenth century with a few private farms. Military Dairy Farms in cantonment were also started, which was the first movement towards organising
Indian dairying as an industry. These farms were meant to produce milk, butter and cream for the army units and their hospitals. The first military dairy farm started at Allahabad as early as in 1891.

Prior to 1900, an enterprising Swede Mr. Edward Kaventer started modern dairy farms at the hill stations of Simla and Darjeeling. Mr. Edward Kaventer has began to use machines for milking the cows, as he had high yielding imported cows. He also started the first modern butter factory at Aligarh. In Delhi, the Kaventer's dairy was established as early as in 1929. Around 1915, the first military creamery was set up at Anand (Gujarat) for supplying butter to the troops in Mesopotamia (Iraq). After the First World War, it was closed down and transferred to the Civil Dairy Department of India. During the Second World War it was converted into a processed cheese factory to produce cheese for the troops. Later on, it was given to the Kaira District Co-operative Milk Producers' Union in 1948.

The history of dairy co-operative movement in our country is attached with the existence of the Katara Co-operative Dairy Limited, Allahabad which is probably the oldest existing dairy organisation registered in 1913, under the Indian Co-operative Societies Act, 1912. Then, the Calcutta Co-operative Milk Union Ltd. was registered in 1919. The Telenkheri Dairy Co-operative Society, Nagpur was also registered in 1922. After this, the Madras Milk Supply
Union came into existence in 1927-28. The late, M. Pastonji E. Polson established a Polson Model Dairy, at Anand (Gujarat) in 1929, which was a first butter-making factory, with the machinery imported from Newzealand. During the Second World War this dairy has supplied its pasteurised cream and butter to the government. Again, the Lucknow Co-operative Milk Supply Union was registered in 1938 as a Federation of Primary Societies. However, real progress in the dairy co-operative movement started only after Second World War. A favourable climate for the development of co-operative dairy is nothing but the phenomenal growth of towns and cities which have increased more demand for milk and milk products.

The National Planning Committee appointed in 1938, instituted a sub-committee for Animal Husbandry and Dairying. After considering the significance of dairy industry, this sub-committee suggested concrete recommendations for the modern dairy industry in India. The real large scale and systematic breakthrough is noticed since 1946, when "The Kaira District Co-operative Milk Producers' Union Limited", popularly known as "AMUL DAIRY" was set up at Anand in Gujarat region.

The establishment of dairy co-operatives has been the most important feature of the Dairy Industry in India after Independence. In 1949, a chilling plant was purchased by the Kaira Union to increase the life of milk purchased.
"The Kaira Union has established a strong bond of symbiosis between the rural milk producers' and the urban consumers and has always remained in the forefront to harness the technological innovations in processing and packaging. Sensing the changing needs of the consumers', the Union has embarked upon a project to modernise and upgrade the manufacturing technologies of milk products so as to produce them on par with the world standards. The project is known as AMUL III. The state-of-the-art technology for optimum efficiency and superior quality products will be used in highly automatic plants under installation at Anand and will be the only one of its kind in the country. To ensure superior quality milk with low bacteriological load, the Union has planned installation of village milk chilling units. With the installation of these facilities within a short time of receipt at the society, the milk will be chilled at a low temperature in the village. This would greatly improve the quality of the incoming milk in the dairy plant.

A 20 MT per day cheese plant is under installation at village Devki Vansol near the district headquarters, Kaira. The cheese manufactured in the plant will cater to the needs of the changing food habits of the consumers. The plant and machinery for manufacturing of cheese and packaging are most modern and latest.
It is the endeavour of the Union to meet the expectations of the milk producers' and millions of consumers throughout the country by its commitments to use technological innovations for the benefit of the milk producers' and consumer alike. In its golden jubilee year, the Kaira District Co-operative Milk Producers' Union Limited, rededicates itself to building a modern dairy industry in India by practising the principles of cooperation."

"Anand did succeed. First it succeeded as a business. The other day one of the European embassies in Delhi asked our office there for information on the five biggest 'companies' in the dairy business. Apparently, a bank in Europe wanted this information. So the information was compiled and what we found was quite interesting. Here are the five biggest firms in the dairy business and their turnovers. (Based on the figures for 1993-94.)

**First Five Biggest Firms in the Dairy Business**

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<th>Rank</th>
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<td>Gujarat Co-operative Milk Marketing Federation</td>
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<td>Kaira District Co-operative Milk Producers' Union</td>
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<td>3</td>
<td>Mehsana District Co-operative Milk Producers' Union</td>
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<td>4</td>
<td>Nestle (Milk products)</td>
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<td>5</td>
<td>Kolhapur District Co-operative Milk Producers' Union</td>
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Kaira district is second in the country and that is only because it helped to create the Gujarat Co-operative Milk Marketing Federation which stands first. And you will notice that except for the Nestle all the other four are co-operative organisations. Cadbury would stand about 7th or 8th, milk food about 15th. Almost all the others on the list of the top 20 are co-operatives! So, you can see that our simple farmers have not done too badly at all". The excellent successful experience of the AMUL DAIRY, Anand pattern encouraged the Government of India to constitute National Dairy Development Board (NDDB) in 1965 and got it registered under the Societies Registration Act and the Bombay Public Trusts Act. The NDDB formulated an integrated Dairy Development Programme in 1969, popularly known as O.F. - I was launched in 1970, and the second stage of the programme known as O.F. - II was launched in 1979 and the O.F. - III was launched in 1985.

In 1970, the Indian Dairy Corporation (IDC) was set up to handle the donated commodities such as milk powder and butter oil, and to generate and disburse the funds for the Dairy Development Programme. In another words, the IDC is nothing but a "Finance and Promotion House" for the country's dairy development. And the NDDB became the official technical expert for the IDC. The Government of India has also set up a Dairy Development Board in 1972 to co-ordinate the activities of NDDB, IDC and State
Governments' activities related to dairy industry. National Co-operative Dairy Federation of India Limited (NCDF) was also formed with its headquarter at Delhi. The standardising of the working of the milk co-operatives in the country was the main aim behind its formation. The NCDF undertakes organisational and promotional programmes.

**STRUCTURE OF DAIRY CO-OPERATIVES**

The structure of dairy co-operatives is basically of two types. One is unitary and the second one is federal. The country like Canada adopted unitary structure for its milk marketing business, and the federal structure is widely practised by several countries including our country. The federal structure is theoretically a sound form of organisation with distinct advantages. Federations are means of achieving vertical integration between the producers' primary co-operatives and the consumers. Moreover, the federations can improve the work performance of its affiliated primaries. The Anand Pattern has implicit faith in the three tier federal pattern, which forms one of its basic characteristics. Variations and modifications in the above pattern are bound to be there according to local needs and depending upon the level of the development of dairy co-operatives. What we realise in our country is a diverse pattern of organisation particularly at secondary level. It
takes either of the following patterns:

1. Primary Societies - Unions - and Co-operative plants like AMUL

2. Primary Societies - Unions - Public sector plants like Ludhiana and Hyderabad

3. Primary Societies - Unions - Private plants like Glaxo Factory at Aligarh

4. Primary Societies - Unions - State Federation having milk plants like Lucknow

5. Primary Societies - Public sector plants like Madurai and Vijaywada

This pattern can easily be shown in the figure mentioned below:

**FIGURE 1**

Primary Societies

```
Unions    Unions    Unions    Unions    Public sector plant like Madurai and Vijaywada
Co-operative plants like "AMUL"    Public sector plants like Ludhiana and Hyderabad    Private plants like "GLAXO"    State federation like Lucknow
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The primary dairy co-operatives are the grass-root level organisations, on them the foundations of the unions and federations are structured of our dairying industry. They work as an effective organisation in assembling the milk at the village level, deciding the value of the milk sold by each member, exercising quality control and making regular payments to the members from whom milk procured. Besides, they play a key role in the hierarchy of co-operative dairy organisations by serving as delivery centres for the various services and inputs to the members. They are also considered as focal points for initiating the various development activities at the village level.

The "ANAND PATTERN" primary milk producers' co-operatives have certain features which are in many respects unique. Assured market for the milk procured, producer orientation, rationalised price structure, an in-built incentives for increased milk production, input services and production enhancement programmes are some of the underlying features, which are incorporated in the objects and functions by means of suitable bye-laws provisions.
OBJECTIVES:

The bye-laws of the village dairy co-operatives lay down the following objects:

1. To act as a supplier of milk produced by members through the District Co-operative Milk Producers' Union.

2. To take necessary steps and render required assistance for enhancement of their productivity of milch animals of members.

3. To undertake various dairy extension activities for their members.

4. To make arrangement to supply the cattle feed and fodder to the members and to undertake steps for increasing the production of green fodder.

5. To encourage thrift, self-help and mutual aid among members.

6. To undertake all other activities which are conducive to promote the achievement of the above objectives.

MEMBERSHIP:

As per the bye-law only genuine milk producers having milch animals and who have agreed to sell their milk through
the co-operative milk society are eligible to become members of dairy co-operatives. There is explicit provision in the bye-law to prohibit the traders in milk and milk products from becoming members. A member can be expelled if he sells milk to private agencies or is engaged himself in trading milk and milk products. The liability of the members is limited to the extent of the paid up share capital. The bye-law prescribed the individual maximum limit for share holding which is normally one-fifth of the paid up value of shares or Rs.1000/- whichever is less.

Funds:

The Board of Directors of the society can raise the financial resources necessary for the working of the society in several ways, e.g., (i) By Share Capital: Each member should take at least one share, the value of which is normally Rs.10/-, (ii) Fixed Deposit: The society can receive fixed deposits from members and non-members for such period as may be decided by the Board, and the interest payable on such deposits should not exceed the rate of interest offered by the District Co-operative Central Bank, (iii) Loan: The Board may arrange to get loan from the government and other institutions and from the co-operative organisations. The maximum borrowing power of society is prescribed as 8-10 times of the paid up share capital and reserve fund.
MANAGEMENT:

The society is managed by a committee/board which consists of nine members elected by the General Body as per the election procedure laid in the Co-operative Societies Act and the Rules. The term of the Committee is three years and one-third of the total committee members retire every year by rotation. The bye-laws of the society specify the eligibility of a person to become a member of the Board. Some of the salient points are:

(a) He should not have direct or indirect interest in the property purchased or sold by the society or in any other dealings with the society.

(b) He should not be a paid employee of this or any other society and should not be related to any of the paid employee of the society.

(c) He should not have performed duty as a paid employee for the last three co-operative years.

(d) He or any members of his joint family should not have any business of the kind carried by the society nor has any partnership interest in such concerns.

The meeting of the committee should be held at least once in a month. The presence of at least five members in the meeting would be treated as the quorum. Majority
decisions always prevailed in the meetings. The Vice-President presides over the meeting in the absence of the president. The committee is alive to the day-to-day problems in milk procurement, production enhancement programmes, relations with Union, etc. The President and the Vice-President are elected by the committee.

**WORK FUNCTIONARY:**

The routine work performance of the society is done by a team appointed by the Managing Committee. Members of team are paid persons. A team is normally consisted of three persons, viz., (i) the Secretary, (ii) Milk Tester, and (iii) Milk Procurement Assistant.

The Secretary is in-charge of day-to-day working of the society. He has to attend the milk procurement twice a day, and to maintain various registers, such as Dairy Register, Day Book, General Ledger, Milk Procurement Register, etc., and also arrange for daily payment to milk producers-members. Moreover, he has to communicate the problems and needs of the society to the Union, dairy plant and the Department of Co-operation. The Secretary is, therefore, trained for better performance in the areas of co-operative management, artificial insemination and First Aid.

The Milk Tester's main responsibility is to take samples from each lot of milk of the producer and to test
its fat percentage. Besides, he has to make entries in the Milk Test Register and give indents for testing materials periodically. The Procurement Assistant is last grade employee, who assists the Secretary and the Tester in their non-technical functions. Loading and unloading of cans, washing the milk cans and preserving the testing materials are part of his routine functions.

MODE OF OPERATION:

The working of dairy co-operatives is divided into many routine functions. Amongst them first is milk collection and then comes other functions viz., testing, payment to producers, input services, sale of milk and distribution of surplus. A little description of each one is given in the following paragraphs:

(i) Milk Collection: Milk collection which is the major activity of the dairy co-operatives is done twice a day - morning and evening. Normally, the collection of milk starts one hour before the scheduled time of the arrival of milk truck and is completed before its arrival. Each producer has to bring his milk to the society within the prescribed time.

(ii) Testing: The milk brought by each producer is stirred well and a sample of 50 ml is taken. The samples so taken are kept in small containers which are numbered for identification. The samples are then tested for finding the
fat with the help of butyrometers, by taking 10 ml of milk from each sample and adding them with acid and alcohol. On the basis of fat the price of milk is fixed. A general fat test is also made from the sample/taken from the pool of milk collected so as to determine the overall fat percentage of the milk at society level.

(iii) **Payment to Producers**: Price per litre of milk is determined according to the price supplied to the society by the Milk Producers' Union based on the fat percentage of milk. Separate rates are given for buffalo milk and cow milk. Each member is given a pass-book in which entries are made as and when milk is poured and its value is determined and payment to the producers is made accordingly. The society is paid once in 10 days. Payment for the society is made on the basis of a pricing system which takes into account both fat and Solids Not Fat (SNF).

Out of the annual net profit of the society an incentive bonus is given to the members to the extent of 50 per cent of the Net Profit. Each member gets his share of the bonus in proportion to the sale of milk.

(iv) **Input Services**: Technical inputs like veterinary aid and health services are extended to producers at free of charge. Veterinary routes are formed and weekly visits by veterinary units are arranged to each society. The mobile veterinary units are stationed at strategic
places. The time and date of such visits are made known to members so that they can avail themselves of the services. Besides, first aid is available at the society for members' animals.

Concentrate cattle feed supply is also undertaken by the societies depending upon the demand and supply. Whenever the societies get the supply of forage seeds like lucerne, maize, etc., it is supplied to members who show enthusiasm in the cultivation of such crops.

(v) Sale of Milk: The District Co-operative Milk Producers' Union or the State Dairy Development Corporation is the buyer of the milk procured by the village dairy co-operatives. The procurement price is fixed by the district unions or dairy corporation as the case may be, taking into account the cost of production, sale price and cost factors involved in procurement and sale of milk. A small fraction of milk procured by the village dairy co-operatives is sold locally so that the village population is not deprived of the benefits of the increased milk production. The village co-operatives receive the price for the milk sold once or twice a week from the milk union or dairy corporation. The village co-operatives are able to get a reasonable margin and even a surplus necessary for running the society economically.
(vi) **Distribution of Surplus**: Every primary milk society can hope to earn as gross margin about 8 to 10 percent of the value of milk handled. This is the major source of income of the society. Besides, a small percentage of profit is earned by the society by way of sale of sample milk locally. Out of the gross surplus, the society has to meet the establishment and contingencies, including salary, rent, electricity charges, telephone bill, if any, interest on borrowings, depreciation and losses. The net surplus earned at the end of the year is distributed as per the provisions of the bye-laws. The net profit earned by the dairy co-operatives is distributed among the (i) Reserved Fund, (ii) Dividend, (iii) Co-operative Education Fund, (iv) Bonus to members, (v) Bonus to employees, (vi) Cattle Development Fund, (vii) Bonus Equalisation Fund, (viii) Building Fund, and (ix) Common Good Fund/Charity Fund.

**DISTRICT CO-OPERATIVE MILK PRODUCERS' UNION**

As a second stage in the institutional building, co-operative milk producers' union is organised at a district level. It is nothing but a federation of the primary dairy co-operatives. The creation of district level union/federation is in conformity with the accepted three tier system of the 'Anand Pattern'. The district level federation is a key institution in bringing about all-round...
development in milk production and marketing. It is this organisation which links the rural producers with the urban milk market. Moreover, it is through this organisation the urban contribution to rural development is made possible by transferring major part of the consumers' rupee to the producers. While the village level societies are primarily engaged in the procurement of milk, the district level union is entrusted the critical task of finding a remunerative market for the milk. The objectives of the district milk producers' union are:

1. To purchase, pool, process, manufacture, distribute and sell commodities of the members of the affiliated societies.

2. To purchase, process, manufacture, distribute and sell cattle feed, dairy machinery, tools and instruments and packaging materials necessary for dairy co-operatives.

3. To encourage the growing of fodder by its affiliated societies or members.

4. To provide veterinary and artificial insemination services and medicines, to undertake breeding programme for the development of the dairy animals.

5. To organise new milk producers' co-operative societies and develop the affiliated societies to
the utmost by giving technical, administrative, financial and other necessary help.

6. To carry on co-operative propaganda with a view to imparting co-operative knowledge amongst their members and its application to business methods.

7. Generally to carry on such other activities as would further the above objectives and to do all such things as are incidental or conducive to the attainment of these objectives.

CONSTITUTION:

The membership of the Milk Producers' Union consists of:

1. Any registered milk producers' society in the area of operation.

2. Any registered co-operative institution which undertakes supply of the union commodities belonging to its members.

The persons dealing with the Union as selling agents, their sureties and with whom union has financial or business dealings may be admitted as associate members. Such members shall have no right to vote or to participate in the management of the union or for a share in the distribution
of profit. The liability of the members is limited to the extent of the paid up share capital. The value of each share is Rs.10/- and every member should hold at least one share. No member shall hold shares exceeding one-fifth of the total paid up share capital of the union.

The General Body of the Union - the supreme authority of management - is represented by the delegates of the affiliated societies. The General Body meets at least once in a year in order to give democratic sanction to the plans, policies and programmes of the Union, approve the budget and capital expenses and to review the general progress. The Board of Directors which is authorised to give direction to the operations of the society, consists of normally 15 persons of whom 12 are elected and the rest three are nominated, one each by the Registrar of Co-operative Societies, the financing bank and the National Dairy Development Board.

The Board of Directors elects a Chairman and Vice-Chairman. No member can present or vote in any matter in which he has personal interest. The Board appoints a General Manager and fixes his remuneration. The executive administration rests with the General Manager. The Board may also delegate the power to appoint other staff and fix their remuneration. Though the General Manager is appointed by the Board, it is significant to note that he can be removed only
by the General Body. This gives him ample administrative freedom.

MAIN ACTIVITIES OF THE UNION:

The District Milk Producers' Union is the monitoring agency in the organisation of village milk producers' societies. Before organising the societies, the Union makes sure that there is adequate potentialities for milk production and whether the producers are willing to join the proposed society. The bovine population, milk production and the marketed surplus is assessed properly. Before starting the society proper spade work is done in the village to create confidence to the producers. It is ensured that the society receives support from all sections of the farmers. The Union also evolves the norms for the viability in terms of numbers of members, quantity of milk to be collected everyday and the required amount of share capital contribution. Before commencement of the business the staff of the society are trained adequately.

(i) Procurement: The milk is collected by the village societies twice a day. The transportation of milk from the village societies to the dairy plant is the responsibility of the union. The procurement routes are formulated and a time schedule for the arrival and departure of the milk truck is given to each society. The milk trucks ply regularly at the prescribed routes as per the time
schedule. The milk cans are loaded and empty cans are unloaded in each trip. The milk is then transported regularly from the society to the dairy plant.

(ii) Processing and Marketing: The milk procured from each society is either taken to the dairy plant straight or it is taken to the chilling centre, depending upon the distance at a pre-determined time. The milk can be safely transported within 3 to 4 hours after milking beyond that it becomes sour. Normally, it should be possible for the good transport system to transport the milk in fresh condition from village collection centres to a dairy plant located 50-60 kms. away. If the societies or collection centres are situated beyond this distance, the milk collected has to be chilled.

The milk procured is processed in the dairy plants owned by the milk producers' union before being despatched for sale. The processing includes pasteurisation, standardisation and conversion of milk into milk products. The milk is sold in the fluid form or in the form of various dairy products. Sale is undertaken either in the local market or at distant metropolitan markets with link up arrangements with the State Dairy Corporation or State level milk marketing federation.

(iii) Input Services: Supply of inputs for milk production and cattle development is entrusted to the milk
union in the 'Anand Pattern'. Three important services are undertaken by the district unions:

(i) Central supply of cattle feed

(ii) Artificial insemination of buffaloes

(iii) Veterinary services available 24 hours a day

The Milk Producers' Union is far from being an organisation engaged in mere purveying of milk. It has to make continuous efforts to increase the productivity of milch animals. "It is believed that the assistance to the village milk producers for increasing productivity of their dairy animals by help to obtain better feed, by provision of veterinary services and by programmes of artificial insemination should be channelled through the dairy co-operatives because these co-operatives are likely to be more efficient in distributing such inputs."

The district union should be equipped with necessary infrastructure such as cattle feed factories, A.I. centres, semen banks, mobile veterinary units etc., to impart the above services. According to the celebrated Canadian Co-operator - Dr. Alex F. Laidlaw: the services which federal societies supply to the primary societies at village level are a vital part of the whole system which no one village society, or even several could provide on their own.
(iv) **Net Profit Distribution**: The difference between the purchasing value and value of sales is the gross profit of the District Co-operative Milk Union. Out of the gross profit, the union meets its working expenses including establishment and contingencies, interest on loan, losses, if any, depreciation and contribution to staff P.F., bonus and gratuity, income-tax, etc. The net profit earned by the union is distributed among the: (i) Reserve Fund, (ii) Co-operative Education Fund, (iii) Co-operative Development Fund, (iv) Dividend, (v) Bonus to members, (vi) Dividend Equalisation Fund, (vii) Building Fund, (viii) Charity Fund, and (ix) Research and Development Fund.

**CLUSTER FEDERATION**

The Operation Flood-II programme contemplates the setting up of cluster federation as a confederation of the district milk producers' unions. The cluster federation will serve as an implementing agency for the milk production, procurement, processing and marketing under "Operation Flood-II." It will also provide a composite spear-head team of skilled personnel including managers, engineers and veterinary and agricultural scientists, and serve as a sort of repository of trained personnel and consultants who will assist the co-operative in implementing the programme locally. Such a cluster federation would thus pave way for viable dairy industry in the milkshed area capable of
responding autonomously to producers needs and consumers requirement. It will also serve as a means for ensuring complete integration both vertical from producer level to the cluster federation and horizontal between the district unions. Besides, the cluster federation will stabilise the market and ensure optimum utilisation of plant capacity by serving as regional milk grid. It is estimated that 25 co-operative milk producers' federations (cluster federation) will be needed by 1985 each covering an average of 6 districts clustered around centrally located balancing facilities.

STATE LEVEL FEDERATION

In some States, the State level milk marketing federations have been organised. These organisations will serve as the nodal institutions to undertake market research, product diversification, export of dairy products and promotion and consultancy services, etc. The State level federation will help to integrate the milk producers with national and international market. State level dairy federations are functioning in Uttar Pradesh, Gujarat, Maharashtra, Punjab and Haryana. In other States also the State level federations are being organised and one such federation has been very recently formed in Tamil Nadu. At the All-India level there is a National Co-operative Federation of India. Such federations will help to co-ordinate the dairy development in the country and help for
the regional balancing of milk production by forming milk grids.

INTEGRATION:

The organisation of federations at various levels and the affiliation of primary dairy co-operatives to such federations result in the vertical integration of dairy co-operatives. In the words of Harold W. Lucius: "Vertical integration is one of the most important factors influencing the success of the co-operative movement in the developing countries, as many primary societies would be greatly restricted in their rate of development without the support of the federative organisation."

The 'Anand Pattern' visualises a close vertical integration between the primary dairy co-operatives and the federations in the field of assembly, manufacture and marketing of milk and milk products.

The integrated structural model evolved at 'Anand' can be presented in the form of a chart. The structural relationship depicted in the chart adumbrates the following integrated functions:

1. The sale of milk by the producers to the primary milk producers' societies, which weights and collects the milk.
2. Transportation, processing, marketing and distribution of milk to the consumers by the district co-operative milk producers' union.

3. Payment of milk made by the district union every 10 days and the village society twice a day.

4. Supply of balanced cattle feed, veterinary services and first-aid and A.I. service by every primary society with the help of the union.

5. Animal health cover and extension services made available by the district union to the milk producers.

INSTITUTIONAL SUPPORTS FOR DAIRY CO-OPERATIVES

An institution is established to run effectively, expand as and when need arises and survive for future growth and development. But all these require local, State and central level supports in terms of finance, guidance, assistance, research and development, etc. Governmental and non-governmental, autonomous, semi-autonomous or private institutions can provide these types of services for the purpose. In-so-far as our dairy co-operatives are concerned, NDDB, NCDC, IDC, NDRI, NCDFI and International Agencies like UNICEF and IDA are functioning well and excellently by
providing institutional supports to grow and grow at every level of operations. An introductory paragraph is given for each one in the following pages.

(i) National Dairy Development Board: The National Dairy Development Board was created in September 1965 by the Ministry of Food and Agriculture mainly with a view to emulating the success of the co-operative venture at Kheda district in Gujarat. It has its headquarter at Anand and its membership is extremely restricted. In the late 1960s the NDDB built up its professional staff to provide dairy project designs and implemented the services which covered milk production, processing and marketing, dairy plant design and construction, management development and consultancy services. The organisation aims at speeding up the overall development in milk production, processing and marketing by undertaking some specific activities. The NDDB is also the implementing agency for the Operation Flood Programme.

(ii) National Co-operative Development Corporation: The NCDC was set up in March 1963, under the NCDC Act 1962, and charged with the responsibility of promoting country-wide programmes through co-operatives in the production, processing, marketing and storage of agricultural produce. The scope of the NCDC was specially extended to dairy programme. It provides financial assistance to dairy co-
operatives for establishing medium and small sized milk chilling centres, processing plants and milk product factories. Assistance is mainly intended for developing infrastructure facilities as distinct from animal husbandry activities. Technical assistance is given to dairy co-operatives for undertaking and formulation of proposals for dairy units in the co-operative sector.

(iii) **Indian Dairy Corporation**: The Indian Dairy Corporation was set up as a government company in the year 1970, and was registered under the Indian Companies Act 1956 on 13-2-1970. The corporation was entrusted with implementation of World Food Programme, assisted project for milk marketing and Dairy Development commonly known as Operation Flood - I. Subsequently, the corporation was entrusted with the responsibility of Operation Flood - II. Under the Operation Flood Programmes, the corporation maintains a pool of dairy machinery and equipment for supply to the various projects. The corporation is the agency for receipt of gift commodities comprising of skim milk powder, butter oil, and butter from World Food Programme and European Economic Community for distribution to the various dairy plants, at predetermined transfer value for generation of funds. The government has appointed the corporation as the canalising agency for export of cattle/buffaloes.

The commercial activities of the dairy development programme under the Operation Flood - I and II are
undertaken by the Indian Dairy Corporation, while the technical activities are assigned to the NDDB. The National Commission on Agriculture had suggested the merger of that two organisations for greater co-ordination.

(iv) National Dairy Research Institute: The National Dairy Research Institute has long years of fruitful services for dairy development in the country. As early as in 1923, the Imperial Institute of Animal Husbandry and Dairying was established at Bangalore, on the recommendation of Dr. N. C. Wright. The Institute was recognised and renamed as Imperial Dairy Institute in 1941. After the recommendation of Dr. H.D. Kay, the Institute was shifted from Bangalore to Kernal and was transformed as the National Dairy Research Institute (NDRI). The Southern Regional Campus of the newly created NDRI was opened in Bangalore. The NDRI is the nodal institution in the dairy research and training. It has elaborate physical facilities - an extensive 400 acre farm, fabulous cattle wealth with 2300 heads of cattle and buffaloes, and 600 heads goats of various breeds an experimental dairy with a floor space of 1000 sq.mts. and a plant bearing 6000 litres capacity and a library. The annual budget of the institute is about 25 crores.

Teaching, research and extension are the main three activities of the institute. It has altogether 9 divisions performing diverse but yet closely related functions in different aspects of dairy development.
NCDFI with headquarter in New Delhi, came into existence in November, 1969. It has in its membership roll, 2 State level apex institutions of Co-operative Dairy Federations and as many as 22 Co-operative Dairy organisations.

Objects: The objects of NCDFI are:

(i) To promote dairy industry on co-operative lines.

(ii) To co-ordinate, help, develop and facilitate the working of the dairy co-operatives. In furtherence to the above objectives the NCDFI shall undertake a scheme to collaborate with governments, national and international organisations in formulating policies and programmes of co-operative orientation for developing different facets of dairy enterprises.

(vi) International Agencies:

(A) UNICEF: "UNICEF" first associated itself in the development of India's dairy industry in 1956 with the commissioning of the plant at Anand, since then it has been providing assistance continuously to schemes and programmes of a more long range development in nature. It has helped in a big way to combat India's milk storage problem by equiping 13
major dairy plants with a total capacity of 20,000 litres of milk a day. The dairies are at Aarey, Ahmedabad, Anand, Bangalore, Baroda, Bombay, Calcutta, Hyderabad, Kanpur, Ludhiana, Madura, Rajkot and Vijaywada.

"UNICEF" also came forward to aid GOI for its subsidised "double toned milk". The amount of subsidy over 10 years will be not less than 1.5 times the loaned value of equipment provided by the UNICEF. The scheme is being implemented in Bombay, Calcutta, Madras, Ahmedabad, Surat and Baroda. Cost of double toned milk exceeding 60 paise is reimbursed and the programme is meant for children below 13 years.

(B) **IDA** : IDA, one of the World Bank group organisations, has been assisting an integrated dairy development programme in three States viz., Karnataka, Madhya Pradesh and Rajasthan. The credit assistance totalling 74.1 million will be made available for the dairy development in these States. This programme aims at helping the beneficiaries, mostly farmers with less than 2 hectares of land and landless, by increasing milk production and enabling them to have a larger cash incomes and higher living standards.
A P I L O T  S T U D Y

1. BORIAVI MILK PRODUCERS' SOCIETY LTD., BORIAVI:

Boriavi Milk Producers' Co-operative Society Ltd., Boriavi, Tal. Anand was established on 26th May, 1949 with 35 members. The executive committee at initial stage was very small and consisted of a Chairman and 7 members. But at present there are nine members and a Chairman on executive committee. At the same time the number of members increased from 35 to 1759.

The main objectives of this society were:

(i) To increase the quantity of milk and number of milk producers.

(ii) To assist the members in improving their social and economic life.

(iii) To improve the quality of milk.

(iv) To impart and provide knowledge and information regarding the animal husbandry and agriculture.

(v) To give fair prices to milk producers in comparison to other agencies.

(vi) To give incentives to milk producers by providing assured market.
(vii) To provide all the needs of the milk producers like cattle feed, forage seed, veterinary aid, etc.,.

(viii) To assist in getting loan from the financial institutions for purchase of milch animals.

(ix) To provide scope for leadership development.

(x) To involve in management and decision-making of society.

Boriavi is 8 kms. away from Anand and its total population is only 15,033 souls. This society has following assets of its own:

(i) A big building for collection of milk and office purpose.

(ii) A T.V. set.

(iii) Primary service centre for milch animals.

(iv) Milk testing machine.

This society has donated Rs.48,614 during the year 1994-95, for the various activities of primary and high school level education, Balkridagan, renovation of village temple, development of Health Centre, village road, purchase of books for library and water facilities for people and animals.
Table 2.1
Financial Highlights of Boriavi Milk Producers' Society Ltd., Boriavi of last 10 years

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<th>Year</th>
<th>Share capital</th>
<th>Reserve Fund</th>
<th>Donation Fund</th>
<th>Expenses on Animal Husbandry</th>
<th>Fund for spreading of co-op. ideology</th>
<th>Net Profit</th>
<th>Payment of Bonus</th>
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Table 2.2
Service Performance of Boriavi Milk Producers' Society Ltd., Boriavi of last 10 years

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<td></td>
<td></td>
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</tr>
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</table>

Sources: Annual Report of Boriavi Milk Producers' Society Ltd., Boriavi, 199

B = Buffaloes
C = Cows
The following Tables 2.1 and 2.2 relating to financial aspects and purchase of milk etc. indicate that the number beneficiaries of this dairy have been getting benefits since its inception.

2. SAMARKHA MILK PRODUCERS' SOCIETY LTD., SAMARKHA :

The Samarkha Milk Producers' Co-operative Dairy was registered on 8th March, 1947 with 67 members. The Board of Management of this dairy was consisted of 8 members. They were as under:

- Chairman
- Vice-Chairman
- Secretary and
- 5 Members

However, some of the farmers of this village have objected this beginning in the sphere of milk business. The basic ground for objection was that then there would be no milk for their children and daily consumption. The main objectives of the establishment of this dairy were:

(i) To improve the social and economic condition of milk producers.

(ii) To have a higher living standard and better condition of village people.

(iii) To remove the exploitation of the milk producers by the middlemen.
(iv) To provide the benefits of the principles and practice of co-operation.

(v) To adopt the modern approach of animal husbandry.

(vi) To fix fair prices of milk.

Mr. Morarji Desai contacted general people of Samarkha village and explained the benefits of co-operation to them. After their satisfactory approach it was resolved that milk producers' co-operative societies should be organised in each village of Kaira district to collect milk from their members. Then, these milk societies would federate into a Union, which would have its own milk processing and pasteurising machinery and facilities.

Today, Samarkha Milk Co-operative Society Ltd. is a good and developed unit in Kaira district. At present, it has 1874 members, and its Board of Management is consisted of a Chairman, a Vice-Chairman, a Secretary and nine members. This society provides a wide range of services to all the members for the increment in the milk production. It also guides its members in taking care of their milch animals and how to protect the latters at the time of infections of various animal diseases. The range of services provided through this dairy covers like: (i) Family planning, (ii) Bio-gas plant, (iii) Sanitation, (iv) Staff services, (v) Donation to education institutions, (vi)
### Table 2.3

Financial Highlights of Samarkha Milk Producers' Society Ltd., Samarkha of last 10 years

<table>
<thead>
<tr>
<th>Year</th>
<th>Share capital</th>
<th>Reserve Fund</th>
<th>Donation Fund</th>
<th>Expenses on Animal Husbandry</th>
<th>Fund for spreading of co-op. ideology</th>
<th>Net Profit</th>
<th>Payment of Bonus</th>
<th>Audit Class</th>
<th>Price difference with Amul Dairy</th>
</tr>
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<tbody>
<tr>
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Table 2.4

Service Performance of Samarkha Milk Producers' Society Ltd., Samarkha of last 10 years

<table>
<thead>
<tr>
<th>Years</th>
<th>Members</th>
<th>Purchase of Milk</th>
<th>Business of Amul Dan</th>
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<tr>
<td></td>
<td></td>
<td>Litres</td>
<td>Price (Rs.)</td>
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<td></td>
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</table>


B = Buffaloes
C = Cows
Animal husbandry services etc.

The improvement in the socio-economic conditions of the members of this dairy is, no doubt, better one. The following Tables 2.3 and 2.4 relating to financial aspects by purchasing milk and supplying of dan etc. indicate that the members of this society have been getting benefits since its inception.

THE ANAND PATTERN

ORIGIN OF AMUL:

Amul dairy is the outcome of the exploitation of the milk producers by the middlemen and contractors in milk business. Purchasing of milk at lower prices and selling it at higher prices was the business practice of middlemen and contractors of milk business in Kheda district. It was totally an unfair practice in the milk business. This practice was noticed when the Government of Bombay started the Bombay Milk Scheme in 1945. Then, the Government of Bombay entered into an agreement with Polson Dairy which was in Anand city to supply milk from Anand to Bombay regularly. Polson kept a good margin, even though, Bombay Government found it profitable. But under the Bombay Milk Scheme the farmers of Kaira district were not better off than before. The farmers were still at the mercy of milk contractors and had to sell their milk at a price fixed by the contractors. The discontent of the farmers grew and they met Sardar Vallabhbhai Patel, who had advocated
farmers' co-operatives as early as in 1942. Sardar Patel reiterated his advice that they should market their milk through a co-operative society of their own. His advice was that the farmers should demand permission to set up such a co-operative. If their demand was rejected, they should refuse to sell their milk to middlemen and contractors. Sardar Patel also advised the farmers' deputation that if they were ready to put up with the loss of milk selling, he was ready to lead them and the deputation accepted his proposal.

Sardar Patel then sent his trusted deputy, Mr. Morarji Desai to Kaira district to organise a milk co-operative and a milk strike, if necessary. Mr. Morarji Desai held a meeting in Samarkha village on January 4, 1946. It was resolved that milk producers' co-operative societies should be organised in each village of Kaira district to collect milk from their member farmers. All the milk societies would federate into a union, which would own milk processing facilities. The government should undertake to buy milk from the union. If this was not done, the farmers would refuse to sell milk to anyone in Kaira district. The government turned down the demand. Then farmers called a "Milk Strike". It lasted 15 days. Not a drop of milk was sold to the milk merchants. No milk reached Bombay from Anand. After 15 days the Milk Commissioner of Bombay, an Englishman and his deputy visited Anand, assessed the situation and accepted the farmers' demand. This worked the beginning of the Kaira
District Co-operative Milk Producers' Union Ltd., Anand. It was formally registered on December 14, 1946.

The Kaira District Co-operative Milk Producers' Union Ltd., known as "AMUL" is headquartered at Anand. Planners, economists, administrators, dairymen, leaders and ministers of foreign countries and journalists have been visiting Anand to study the ingredients of its success.

The farmer owned Amul co-operative in Anand with its integrated approach ato production, procurement, processing and marketing of milk along co-operative lines came to be regarded as a MODEL for dairy development in India.

The following pages graphically record the indicators of progress and growth of Amul.

The foundation stone of the project to process milk into the powder and butter was laid by the President of India, the late Dr. Rajendra Prasad on November 15, 1954. On October 31, 1955, the project was completed and the very same day, the late Pandit Jawaharlal Nehru, the then Prime Minister of India, declared it open. The plant of cheese and roller-dried baby food was being processed from buffaloes milk on a large commercial scale which was first in the world, was inaugurated in 1960 by Mr. Morarji Desai, who was

Practically all the villages in Kaira district have a milk producer's cooperative society with the membership registering a significant increase over the years. On an average the membership per society stands above 500, of which approximately 15 per cent are women. Almost all the households in the district who own milch animals have enrolled as members of the milk producers' cooperative societies.
A steady increase in milk procurement indicates the faith of the farmers in their organisation. Between 1946 to 1971 (Silver Jubilee Year) only buffalo milk was accepted by the union. From 1971 onwards, the union decided to also procure milk from cows and thereafter there has been a gradual increase in its procurement of cow milk, accounting for about 34 per cent of the total milk. There are several factors which affect the procurement from year to year. Some are related to the breeding cycle of animals, natural calamities, like drought, floods etc, pricing of milk and competition with private trade in the area.
The union created facilities for manufacture of butter only in October 1955 with the production crossing over 6,000 MT per year today and marketing under the popular brand name AMUL, which has become a household name in the country. The facilities for manufacture of butter are being augmented in the modernisation and expansion plan, currently under implementation.
Like butter, the facilities to produce milk powder were also set up in 1955, with the commissioning of the dairy plant. It was for the first time in the world that milk powder from buffalo milk was produced. The union produces several varieties of milk powders such as Skim Milk Powder, Whole Milk Powder, Baby food, Amulya etc. The facilities for manufacturing powder have been further expanded and modernised with the installation of the automated milk drying plant. Along with the powder production facilities, the packaging infrastructure is also being modernised.
Cattle feed is one of the main tools for increasing the milk production of milch animals. The concept of balanced cattle feed became a reality with the setting up of a most modern cattle feed plant in 1964. In 1981, the second cattle feed plant was started to meet the ever increasing demand for balanced cattle feed. In December 1988 the union switched over to the manufacture of bypass protein cattle feed. All the cattle feed produced by the union is marketed only through the milk societies in the district. On an average the union sells 640 gms of cattle feed on every litre of milk procured by the union.
The increase in the turnover of the union reflects the economic contribution it is making to the rural economy of Kaira district in general and the members in particular, with approximately Rs 60-70 lakhs being pumped in the rural economy every day through payments made on milk. What started as a small business of a few lakhs in the late forties, has now grown into a big business enterprise.
The audit of an organisation reflects the management of its financial aspects. The audit of the producers' cooperative societies in Gujarat is assigned to a supervision and Audit Committee constituted by the state government. The audit of primary societies is performed on a continuous and concurrent basis. Primary societies having A or B audit classification indicates the healthy functioning of the society. As per the byelaws of the union, only A and B audit class society members can contest for the post of the Board of Directors in the union.
While the society procures milk from the milk producers and sells it to the union, there is a margin built in the pricing. The profit earned by the society is distributed according to the statutory requirements and as per the provisions in the byelaws. After contributing a portion of the profit into reserve fund, cooperative education fund and dividend to be paid on share capital, the remaining amount is apportioned according to the byelaws into patronage bonus (on the basis of the business, members transact with the village society) and into various funds such as Animal Husbandry Improvement Fund, Charity Fund, Cooperative Propoganda Fund etc. From these funds the society takes several developmental activities which have a direct bearing on the quality of life in the rural areas. The members of the society decide the needs, priorities and utilities of these funds for their maximum benefits. It is this element of the cooperative system which separates them from other business systems.
then India's Finance Minister and then Prime Minister. The another plant to make balanced cattle feed was donated by OXFAM under the freedom from Hunger Campaign of F.A.O. It was formally commissioned on October 31, 1964, by the late Shri Lal Bahadur Shastri, the then Prime Minister of India.

One more plant for producing butter and milk powder was speedily completed and was declared open by Mr. Morarji Desai on April 3, 1965.

WORK ORGANISATION :

"AMUL" was started with a handful members of only two village societies and has grown to 954 village societies with 532670 members. Milk handled has also gone up from 250 litres a day to 2253 lakh litres a year. The total turnover of Amul has gone upto Rs.344.5 crores.

The "Anand Pattern" in the beginning was a two-tier system, i.e. (i) the village society concerned mainly with primary producers and collection of milk, and (ii) the union, looked after processing and marketing and providing technical inputs to improve the milk of milch animals.

The pattern of working evolved by the Anand Union has come to be known as "Anand Pattern", and it succeeded because it businessed with fair price to the milk producers.
and high quality milk and milk products to the consumers. Under the Anand Pattern, a village co-operative society of primary producers is formed under the guidance of a supervisor or a milk supply officer of the union. A milk producer becomes a member by paying an entrance fee. The District Union represent all the village societies. It was a 20 members' Board of Directors. The Board frames different policies for its working. The Union's main functions are:

(i) to buy all the milk from the societies,
(ii) to process it,
(iii) to sustain the growth of milk co-operatives, and
(iv) to provide technical inputs for higher milk production.

Thus, the Anand Model has proved to be a successful business proposition for the development of dairy industry on scientific lines. It resulted into the most effective institutional structure for dairy development and in multiple benefits to the rural community. The milk producers of different districts of Gujarat adopted the milk production and marketing methods adopted by Anand Union. Few other States also adopted the Anand Pattern. Considering the potentialities of the Anand Pattern dairy co-operatives to render immense benefits to rural society, the late Prime Minister, Shri Lal Bahadur Shastri, stressed the need for its replication as follows:
"If we can transplant the spirit of Anand in many places, it will also result in rapidly transforming the socio-economic condition of the rural areas and in our achieving the objectives of a socialistic pattern of society."

Commending the role played by the milk producers' cooperatives of Anand in social uplift and economic development of villages, the Economic Times, February 2, 1964 wrote thus:

"A dozen Anand in India located at suitable centres will work a more tremendous revolution in our rural economy than a couple of hundred annual political jumborees."

CHARACTERISTICS:

The concept of Anand Pattern dairy co-operatives could be understood only by a proper understanding of its basic characteristics, shown as under:

(i) The structure of the "Anand Pattern" milk co-operatives is consist of a three-tier system, i.e. (a) the village milk producers' society, (b) the District Co-operative Milk Producers' Union, and (c) Gujarat State Co-operative Milk Marketing Federation.
(ii) It is entirely producers' owned organisation. The management of it is in the hands of elected leaders of the milk producers.

(iii) The society's potentiality for success and its economic viability are assessed and ensured, and then it is recommended for registration.

(iv) Every society is constantly guided, supervised, rectified and controlled by the union.

(v) It provides a packet of technical inputs such as A.I., cattle feed, veterinary services, etc., to the members to increase milk production. Such services are provided at the door-steps of the producers at economical cost.

(vi) A scientific system of pricing for milk has been evolved. The payment is made on the basis of the fat and solids - Not - Fat (SNF) content of the milk which is tested separately for each producers.

(vii) A substantial part of the surplus earned by the society is paid back to the producers in the form of bonus in proportion to the quantity of milk they supplied during the year.
(viii) The 'Anand Pattern' societies do not encourage any type of lending to members.

(ix) The societies undertake extension activities related to dairying for their members.

(x) Dairy co-operatives undertake different rural development activities for the welfare of their members and general public as a whole.

(xi) Quick payment to the producers leaves no scope for any misappropriation, and helps the producers for their daily bread and butter.

(xii) The secretaries of the village societies are trained in A.I. and first-aid.

(xiii) The 'Anand Pattern' societies do not undertake any significant local marketing.

SOCIO-ECONOMIC SIGNIFICANCE OF DAIRY INDUSTRY

The need for promotion of co-operative dairy industry in India arises due to several considerations. We have our own agrarian economy, vis-a-vis we have also varied industries which play a vital role in socio-economic development of the country, dairy industry is one of them. Dairy industry provides food and nutrition, creates rural and urban employment and then results into family income. This industry is based on animal husbandry and agriculture,
which again contributes a lot in our economy. It is very pertinent to note here the observations made by the National Commission on Agriculture. It has emphasised the need for cultivators of the small and marginal farms, as also landless labours, taking to milk production for employment and income. On small farms of 1.7 hectares, it was estimated that the introduction of dairy enterprise could increased the farm income from Rs.5692 to Rs.12275 and the employment level from 4412 man hours to 4916 man hours per annum. On marginal farms also a similar trend was noticed with respect to increase in income and employment. The introduction of dairy enterprise increased the income of a small farm of 2.49 hectares by 67 per cent of a medium farm of 5.02 hectares by 32 per cent and of a large farm of 10.87 hectares by 41 per cent. Similarly, the employment for the respective categories of the farms increased by 22.26 and 37.00 per cent.

Table 2.5 indicates that the milk production has been increasing since 1950-51. Its production increased from 17.41 million tonnes in 1950-51 to 60.80 million tonnes in 1993-94, giving an average increase of 0.99 lakh tonnes per annum. Table 2.5 also reveals that the per capita milk availability has increased to 187 grams per day in 1993-94 as against 107 grams per day in 1969-70. Milk availability per capita per day 187 grams is lower than the minimum nutritional requirement of 220 grams per day. Thus, to reach
Table 2.5
Milk Production and Consumption in India
(1950-51 to 1993-94)

<table>
<thead>
<tr>
<th>Year</th>
<th>Milk production (million tonnes)</th>
<th>Increase per annum (lakh tonnes)</th>
<th>Per capita daily milk availability (grams)</th>
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<tr>
<td>1950-51</td>
<td>17.41</td>
<td>-</td>
<td>132</td>
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<tr>
<td>1955-56</td>
<td>19.72</td>
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<tr>
<td>1993-94</td>
<td>60.80</td>
<td>18.00</td>
<td>187</td>
</tr>
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</table>

this deficit of supply and demand, it is needed to increase the production of milk. Mr. Shyamlal Yadav, Agriculture Minister, GOI, has also stated at the International Seminar on dairy industry as a means for development: Indian Experience, at Anand on 16th January, 1989, that our milk availability is far behind in comparison to our minimum requirement, i.e. 220 grams per day.

Widespread unemployment and under employment also present a strong case for the adoption of dairy farming and mix farming to mitigate this problem.

A study made on the impact of the White Revolution on labours’ standard of living reveals that mixed farming created 32 per cent of extra work as compared to arable farm, and dairy farming created 45 per cent of extra work as against mixed farming and 92 per cent of extra work as compared to arable farming. It has also estimated that an additional employment of 129 days as compared to mix farming and 255 days as compared to arable farming were found by maintaining dairy farm. It has also been proved in another study that milk production is more economical for landless labours and small farmers than in big farms. A large proportion of female labour force finds scope for fuller utilisation in several operations connected with cattle and buffaloe rearing.

Dairy industry also provides an ample scope for the employment to our adult - educated and non-educated: (i) in the offices of village dairies and district dairies, (ii) at
the milk distribution centres, (iii) in the transportation of milk from village societies to the union, (iv) in the manufacturing of dairy supplies, and (v) in the business of milk and milk products.

Now-a-days, we are providing technical assistance and consultancy in the establishment of dairy industry in Shri Lanka, Pakistan, China, Nepal etc. countries. This is nothing but a great achievement, we have attained in the field of dairy industry.

At last, dairy industry plays a vital role by providing nutrient milk and milk products to our children and teenagers for their bright future in terms of their good health and mental growth and development. Milk is considered as a source of protein, calcium, phosphorous, Vitamin D..... And hope of future.

The following charts related with milk production, consumption, milksheds, farmer-members, Anand pattern VMPCs, average rural milk procurement, etc., would definitely explain the vital importance of dairy industry in our country. In milk production, today we are second in the world after the United States. Equally important is the role of dairying in providing sustainance to millions of farmers, who constitute 75 per cent of the total population in some 80 million farm households.

Milk Production and Consumption in India

MILK PRODUCTION
(MILLION MT)

PER CAPITA MILK CONSUMPTION
(AVERAGE GRAMS PER DAY)

Note: 1. Milk production figures for 1990-91 onwards are provisional.
2. Per capita figures are estimated.

Source: Based on (or derived from) milk production data as published by the MOA, Government of India.
OPERATION FLOOD
Milksheds

Note: For the period 1975-83, the milksheds include those of the World Bank-assisted projects included under Operation Flood.
OPERATION FLOOD
Farmer Members

0.28 0.56 1.75 4.48 6.25 7.94 8.37 8.67
70-71 75-76 80-81 85-86 88-89 91-92 92-93 93-94

0 2 4 6 8
Note: In the case of a few milksheds where data for 1970 to 1977 were not available, estimated figures have been used. For the period 1975-83, the data include those of World Bank-assisted projects.
where data for 1970-77 were not available, estimated figures were used. For the period 1975-83, the data include those of World Bank-assisted projects.

Note: In the case of a few milksheds where data for 1970-77 were not available, estimated figures have been used. For the period 1975-83, the data include those of World Bank-assisted projects.
FOOT-NOTES


9. NDDB, Anand, Spreading the Amul message, Business India, Bombay, March 1-14, 1982, P. 44.


25. Kulandaiswamy, V., Co-operative Dairying in India, P.73.


