CHAPTER 1

DESIGN AND EXECUTION OF THE STUDY

In the words of Calvert, cooperative is, “a form of organization wherein persons voluntarily associate together as human beings on a basis of equality for the promotion of economic interests of themselves.” C.R. Fay says that, “cooperation is an association for the purpose of joint trading among the weak and conducted always in an un-selfish 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.”

According to International Cooperative Alliance, a cooperative can be defined as “an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly-owned and democratically controlled enterprise”.

Center for Cooperatives defined cooperative as a “private business organization that is owned and controlled by the people who use its products, supplies or services. Although cooperatives vary in type and membership size, all were formed to meet the specific objectives of members, and are structured to adapt to members changing needs”.

Professor Lambers’s definition has received the widest recognition. It has been supported by cooperative leaders throughout the world. Lamber says that, “a cooperative society is an enterprise formed and directed by as association of users, applying within itself the rules of democracy and directly intended to serve both its own members and community as a whole.” This definition clearly lay
down that a cooperative organization is not only meant to serve the interest of its members, but also of the community.

From the above definitions it would be clear that there is hardly any unanimity among the writers regarding the scope and subject-matter of cooperation. One cannot find a common denominator for these divergent opinions. A cooperative society, thus, can serve various aims and economic systems and can cater to the needs of politically, socially and religiously divergent people at one and the same time. Since dairying and milk production involves all these aspects, Co-operative has been recognized as the best suited agency to promote dairying and milk production.

1.1 MEANING OF DAIRY COOPERATIVES

Dairy Cooperative is an association of small-land-holder of milk producers, marginal farmers and landless labourers to organize to produce milk and milk products, collection of milk, carry out research to maintaining the quality of milk and bovine, manage the farm and production of fodder and marketing the milk and milk products. It serves the interest of not only to its members but also community at large.

1.2 OBJECTIVES OF DAIRY COOPERATIVES

The Dairy Co-operatives have been organized with manifold objectives. Firstly, they have a role in augmenting the milk production and thereby increasing the per capita availability of milk which has been dwindling. Secondly they have the object of supplying quality milk to the urban consumers at reasonable rates. Thirdly they have to improve the rural economy by increasing the quality of milch products.
animals, average milk yield and enable milk production as an economic venture. The milk co-operatives therefore have a crucial role to play both from the producers and consumers point of view. Encouragement of Cooperative milk supply / producers society, therefore has been a committed policy of Government. In this context the Government has encouraged the co-operatives by providing financial, managerial and technical assistance to organize more number of Cooperative societies so as to bring the milk producers under its fold.

1.3 ORGANISATIONAL STRUCTURE OF DIARY COOPERATIVES

The most rational organizational parameters for dairy cooperatives would be:

(i) Primary milk producers’ cooperative societies at the village level which would be operationally and financially viable. Such societies should be in a position to collect at least 300 to 500 litres of milk daily depending on the margin available between purchase price and the sale price.

(ii) District milk producers cooperative union which will own chilling plants located strategically and a pasteurization plant. The capacity of the pasteurization plant should be decided with due regard to (a) the quantity of milk which could be marketed locally in the urban areas of the district (b) the possibility of chilling and transporting surplus milk after meeting the local demand, to the nearest metropolitan city dairy for pasteurization and distribution.

(iii) A state level for or regional dairy federation which would be able to supports and guide district unions absorb surplus milk available with the District Unions for distribution in the big cities and also convert any surplus
milk received from the district unions into milk powder and other products 
either for sale, or for later use for recombination in times of scarcity 
particularly in the lean season. It is important that the Federation should 
have control over the dairies and the market in at least one major city 
which could absorb surplus milk.

1.4 SIGNIFICANCE OF THE DIARY COOPERATIVES

1. Dairying has become an important secondary source of income for millions 
of rural families and has assumed the most important role in providing 
employment and income generating opportunities.

2. The sector is highly livelihood-intensive and provides supplementary 
inecome to over 70 percent of all rural and some urban households. Milk 
production and marketing system in India is unique. Most of the milk is 
produced by small, marginal farmers and landless labourers.

3. About 14.46 million farmers have been brought under the ambit of 1, 
44,168 village level dairy corporative societies.

4. Land holdings in India are generally marginal, small and fragmented. 
Medium and large holdings account for less than 10 percent of the holdings. 
Landless, marginal (below 1 ha) and small (1-2 ha) land holdings constitute 
about 80 percent of rural households and own almost 33 percent of the total 
farming land holdings.

5. Livestock production in rural India takes place as a household activity and 
seldom employs hired labour.
6. Women constitute 71 percent of the labour force in livestock farming; there are 75 million women compared to 15 million men, engaged in dairying. Rural women play a significant role in animal husbandry and are involved in feeding, breeding, management, health care and other operations.

7. Landless labourers own milch animals and earn substantial additional incomes from sale of milk, particularly in the dairy cooperative society (DCS) villages and other areas with a milk marketing infrastructure.

8. In a normal year, crop production can generate employment for this workforce for only 90 to 120 days, for the remaining period, they are virtually unemployed. In this setting, dairying provides for the employment imbalance.

9. The dairy sector today provides 80 million farm households with the triple benefits of nutritive food, supplementary income and productive employment for family labour, mainly for women.

   The Indian Dairy sector acquired substantial growth momentum from 9th Plan onwards, achieving an annual output of 121.8 (estimated) million tonnes of milk during 2010-11. This has not only placed the country on top in the world, but also represents sustained growth in the availability of milk and milk products for the growing population. Hence, Dairying is a major source of livelihood for a large population of rural India, especially small farmers. More than 70 million of some 147 million rural households depend on dairy, in varying degrees, for their livelihood. Annual milk production in the country today is about 120 million tons, most of which is consumed domestically by
India’s 1.2 billion, largely vegetarian, population for whom milk and milk products are an important part of food and nutritional security.

1.5 FEATURE OF SMALL-SCALE DAIRYING IN INDIA

India has around 577 million small holders comprising of landless small and marginal farmers. 350 million (70 million rural households) farmers keep dairy animals. Out of these households, 75% (52 million households) are small, marginal and landless milk producers. The size of the herds vary from 1-2 to about 6-8. Amongst these 52 million small milk producing households, around 13 million are connected with the dairy cooperative in India (Animesh Banerjee, Lessons Learned Studies: India p.12). The most desirable economic feature of India’s small-scale dairy industry in the present era is low energy consumption in milk production compared to developed countries. This is mainly because of: a) the use of animal and human power in producing fodder and feed; b) feeding of crop by-products such as straw, rice bran, cottonseed and oilseed cakes whose production does not require any additional energy; c) the predominance of grazing over stall-feeding; d) the use of human power for milking, tending and disposal of animal wastes including dung; e) keeping animals in low-cost sheds or in the open; f) relatively low consumption of concentrated feeds. In addition to these natural sources, also many innovative practices and management practices, contribute to the success of smallholder dairying.
1.6 SIGNIFICANCE OF THE STUDY

Kaira District Milk Producers Union in Anand (Amul) is the role model for dairy cooperatives not only in India but also in the World. The Amul Pattern of organisation structure was world-wide accepted phenomenon. The Amul not only created its name in the Amul Pattern but also in spear of Computerization also. The success story of Amul reveals that Amul was to align the information strategy with the business strategy of the organisation and derive the maximum benefits from the computerization. Amul studied its existing functions and operations and formulated an IT plan for its growth in the 21st Century.

Tamil Nadu Milk Cooperative Federation (Aavin) in Tamilnadu also achieved greater success in its operation but it did not reach to the level of success of Amul. Aavin should study its existing functions and operations and make use of the computerization in all its spear of activities then only it will achieve the Amul’s dizzy heights in India. Therefore, it is significant to study the Aavin’s existing dairying operations thereby understand the practical difficulties in full computerization and how to get over the difficulties and derive the maximum benefits.

1.7 STATEMENT OF THE PROBLEM

While the Dairy sector had witnessed significant growth over the past decades due to ‘White Revolution’ spearheaded by the National Dairy Development Board (NDDB) growth rate of milk production has slowed in recent years, from an average of 4.3 per cent per annum in the 1990’s to 3.8...
per cent per annum in the 2000’s. As the economy grows, and income rise, demand of the milk and milk products’ is expected to rise even further. According to Government of India estimates, demand for milk is projected to grow to at least 180 million tons by 2021-22. Meeting this demand from domestic supply would require production to grow at 5.5 per cent per annum over the next decade. “To meet the growing demand for milk and accelerate dairy development in the country, the National Dairy Development Board (NDDB) has prepared a National Dairy Plan (NDP) aimed at improving animal productivity, strengthen/expand infrastructure for milk procurement at the village level, and enhance milk processing capacity and marketing, backed by appropriate policy and regulatory measures” said Mr. Venu Rajamony, Joint Secretary in the Department of Economic Affairs, Ministry of Finance, Government of India.

A major concern in the Indian Dairy is low animal productivity. Average milk yield of Indian cows is only about 3.4 kilograms a day against a world average of 6.3 kilogram a day. Even though the concept of Dairy Cooperatives is very good and small dairying method was better than others, but because of organizational and managerial defects, the desired progress could not be achieved and producers could not get remunerative returns. Hence, as per the views of Joint Secretary the present state of affairs of the Dairy Cooperative societies in India is not very healthy. This may be due to the lack of proper planning in the procurement of milk from the suppliers, lesser number of chilling units and lack of storage facility, lack of managerial
Therefore, for reducing the cost of production of milk and increasing the various operational efficiency through the effective management of dairy cooperatives by introduction of fully computerized system in Cooperative Dairy farming is of utmost importance. The dairy cooperatives can sustain if they make the introspection of the activities and try to make necessary steps to manage the dairy through effective utilization of computer applications. This will definitely be helpful to the wellbeing the Cooperative Dairy Farming in the India and also in the State of Tamil Nadu. Therefore an attempt is made by the researcher how to make use of computer applications in an effective manner in the Dairy Cooperatives. For this purpose the present study of “Computer Applications in the management of “Aavin” Dairy Cooperative Societies in Tiruchirapalli” was taken up to address the following issues: 1. What are the practical difficulties with regard to the introduction of fully computerized system in “Aavin” Dairy Cooperatives in Tiruchirappalli Union? 2. What are the costs to be involved in the implementation of the computerized system in all Producers Dairy Cooperatives? 3. What are the benefits to be received by the Dairy cooperative’s members and employees by introducing the fully computerized systems? As a student of cooperation, and also having the knowledge in the Computer application, the researcher considered it pertinent to study the above issues and selected these problems for the present study
1.8 OBJECTIVES

The Objectives of the study are:

1) To know the Profile of Dairy Cooperatives in India and Tamil Nadu in particular.

2) To know the Computer Applications practiced in Kaira District Anand Milk Union Limited (AMUL) in Gujarat.

3) To understand the present status of Computer Applications in “Aavin”s Dairy Cooperative in Tiruchirappalli Union.

4) To explore the possibility of introducing the Total Computer Application systems in the Aavin Dairy Cooperatives.

5) To make the Cost and Benefit analysis for implementing the total computer applications in Aavin Dairy Cooperatives.

1.9. OPERATIONAL DEFINITIONS

AI - Artificial Insemination

AMUL – Anand Milk Union Limited

APDC - Anand Pattern Dairy Cooperatives

APEDA - Agricultural and Processed Foods Export Development Authority

BO - Butter Oil

BOA - Board Of Agriculture

DCU - Dairy Cooperative Union

DSC - Dairy Cooperative Society

GBMS - Greater Bombay Milk Scheme

GHP - Good Hygiene Practices
GMP - Good Manufacturing Practices
GOI - Government Of India
HACCP - Hazard Analysis and Critical Control Point
ICAR - Indian Council of Agricultural research
ICCMRT - Institute of Cooperatives and Corporate Management
IDC - Indian Dairy Corporation
IMDP - Intensive Mini-Dairy Project
LPD - Litres Per Day
MC - Management Committee
MMPO - Milk and Milk Products Order
MPO - Milk Producers’ Organization
NCDFI - National Cooperative Dairy Federation of India
NDDB - National Dairy Development Board
OF - Operation Flood
Rs - Rupees
SCMPF - State Cooperative Milk Producers Federation
SMP - Skimmed Milk Powder
SNF - Solid-Not-Fat
SWOT - Strengths Weaknesses Opportunities Threats
UNICEF - United Nations Children’s Fund
WEP - Women Education Programme
WFP - World Food Programme
WMP - Whole Milk Powder
1.10 METHODOLOGY

This study is an Explorative type of research. It is Explorative study in the sense that there were no noteworthy studies in Computer Applications in the management of Dairy Cooperatives in Tamil Nadu. The data collected for the study included both primary and the secondary.

1.10.1 Pilot Study

Before the collection of the data, a comprehensive rough interview schedule was prepared to contact the Secretaries of Milk Producers’ Cooperative Societies. The researcher has collected the data from them and discussed with them in order to modify the interview schedule wherever necessary.

1.10.2 Primary Data

After the Pilot study, Primary data were collected through the Interview Schedule. With the help of the interview schedule, the researcher has collected the information about the usage of the existing Computer Application system in the Tiruchirappalli Union. The data also were collected by way of having discussion and interview with the Secretaries of Milk Producers’ Cooperative Union in Tiruchirappalli, “Aavin” Executives at Chennai of Tamil Nadu State and “Amul” in Anand, Kaira District of Gujarat State. Primary data were also collected from the Federation through the Interview Schedule and from the members of the Producers Cooperative Societies. These members were selected randomly from the 5 Milk Producers Cooperative Societies in Tiruchirappalli Union. The data pertaining to the Computer Application in the Management of the Aavin Tiruchirapalli Union were collected through the Interview Schedule. All these
Interview Schedules and Questionnaire were appended.

1.10.3 Secondary Data

Secondary data relevant for this research work were collected from the offices of Primary Milk Producers Cooperative Societies, Milk Producers Cooperative Union, Milk Federation at Chennai and “Amul” in Anand. Apart from the official sources, the extensive utilisation of libraries, Books, Magazines, Reports and Economic Survey and Web sites were made.

1.10.4 Area and Scope of the Study

Aavin Dairy Cooperative, Tiruchirapalli Union comprising Tiruchirappalli, Karur and Pudukottai Districts has been taken up for the study. The study mainly focussed on how the Computer Applications is effectively utilised in Aavin Dairy Cooperatives in general and Tiruchirapalli Union in particular. The map of Tamil Nadu and the location of Aavin Tiruchirapalli Union is given in the following page.
1.10.5 The Period of the Study

The present study covered a period from 1951 to 2012 pertaining to the Secondary data, and the Primary data were taken from the period from 2010 to 2011.

1.11 SAMPLING DESIGN

There are about 465 active Milk Producers Cooperative Society in AAVIN, Tiruchirappalli Union. Among them 90 of the Milk Producers Cooperative Societies are using the computer in their operations. All the 90 Milk Producers Cooperative Societies were contacted for the information, but out of the 90, only 83 Milk Producers’ Cooperative Societies have given the complete data. The employees of AAVIN, Tiruchy Union is also taken up for this study.

1.12 METHOD OF ANALYSIS

The collected data were coded and entered in to the Ms-Excel Package for analysing the data and preparation of various Charts. The Statistical tools like the percentage analysis and Mean, Standard Deviation and Correlation analysis were made to measure the impact of the computer applications in the Dairy Cooperatives through the Social Science Statistical Package.

1.13 LIMITATIONS

The study has the following limitations:

1. Due to Time and Cost constraints, the researcher selected the Aavin, Tiruchirappalli Union for the study, as the problems and other aspects are more or less uniform throughout the Unions in Tamil Nadu.
2. The researcher has confined this study to the effective utilization of Computer Applications in Aavin Dairy Cooperative in Tiruchirapalli, Union alone.

3. The researcher has made efforts to make complete enumeration, but some of the Aavin Milk Producers’ Cooperative Societies’ secretaries were reluctant to provide the information and some of the societies do not have the proper records. However, efforts were made to collect the maximum data from the entire Producers’ Cooperative Societies.

4. The researcher contacted only those Milk Producers Cooperatives Societies in Tiruchirapalli Union which are using computers in their dairy operations.

1.14 CHAPTER SCHEME

Chapter I describes the statement of the problems, the objectives of the study, methodology and limitations of the study and finally the chapter schemes were described.

Chapter II gives brief account on the review of literature which contains the details about the earlier studies that were conducted by various researchers in the field of cooperative and particularly in the dairy cooperative, and the articles which emphasize the necessity of the study is recorded.

Chapter III explains the Profile of the Dairy Cooperatives in India in general. It traces the origin and growth of the Dairy Development in India. With regard to Tamil Nadu it describes the objectives, functions, organizational structure, membership and growth of the “Aavin” Milk Cooperative Societies.
Chapter IV gives brief account of the computer applications in Dairy Cooperative in Anand, how it has benefited the people in the State of Gujarat. In this chapter, the origin and development of “AMUL”, in Gujarat is provided. It discusses the Amul’s training initiatives, introduction of ERP (Enterprise Wide Integrated Application Systems) software development, Dairy information System Kiosk (DISK) and Business Model.

Chapter V discusses the existing system of computer usage in the Aavin Dairy Cooperatives in the Milk Federation, Milk Producers Cooperative Union and Milk Producers Cooperative societies, the various forms used in the organization, procedure adopted in various departments, the relationship among the data integration among the various departments, process of data, measurement of quality of milk, procurement of milk from the Producers’ of Milk, Maintenance of accounts and the infrastructure existing in the Aavin. The details about the departments where the computerization is done and details about the departments where computerization is not done have also been given.

Chapter VI deals with the benefits of computerisation in AAVIN Dairy Cooperatives, analyzing the existing systems and procedures in detail regarding the Milk Producers Cooperative Societies, connected with AAVIN, Tiruchy. The chapter also discusses the computerisation process, employee’s knowledge and usage of computer and its application, their experience in handling the issues related with computers in AAVIN, Tiruchy Union. The usage of computers, other electronic tools, its application in their daily reports, the advantages of minimized administration cost, increasing trustworthiness of members and improvements in
functions, reduced defects, efficient accounts management, fast payment
dispersal in the Society level are also discussed. It also explains the present
status of computerisation in MPCS and AAVIN, Tiruchy.

Chapter VII deals with the cost benefit analysis of the usage of Computer
in the field of Dairy Farming. Whether the benefits of computerization pass on to
the members by Producers Cooperative Milk Societies or not and whether the
District Cooperative Union passes on the benefits to the Producers Milk
Cooperative Societies or not are analyzed. An estimate of the infrastructure
needed for the total computerization of Aavin Milk have been explained.

Chapter VIII offers the summary of findings of the study. Some of the
policy implications are also given in this chapter. Finally, the conclusion of the
study is given.