Chapter I

Introduction
CHAPTER – I
INTRODUCTION

Dairying provides livelihood to millions of Indian farmers and generates additional income and employment for a large number of families in the countryside. Dairy industry is the single largest contributor to India’s GDP and with its profound social impact, involves over 80 million small farming households. However, India with about 18.36 per cent of the world’s total cattle and buffalo population accounts for only about 14.5 per cent of the world’s total milk production. Our livestock are roughly half as efficient as the average milk animals in the world and probably only one-fifth as efficient as those in the advanced countries. Although milk production in India has shown a rising trend ever since the inception of ‘Operation Flood (OF)’ programme in 1970-71, the Indian dairy industry acquired substantial growth from eighth plan onwards with rise in milk production from 58 million tonnes in 1992-93 to 108.5 million tonnes in 2008-09. This has not only placed Indian dairy industry on top of the world but also led to sustained growth in the availability of milk and milk products for the burgeoning population of the country. India has acquired the position of the largest producer of milk in the world despite constraints like rearing of livestock under sub optimal conditions due to low economic status of dairy owners. The development of Indian dairy sector is an unprecedented success story as it is based on millions of small producers. The subsidies provided by the developed countries to their dairy farmers have helped them to lower the prices of dairy products, affecting in turn, the farming community in the developing world. Traders are now free to import milk products and thereby earn high profits at the expense of farmers belonging to developing countries like India.

India has attained the first rank in milk production in the world. The first five countries in the world producing maximum milk are India, USA, Russia, Germany and France. India has produced 13.1 per cent of the total milk produced in the world. To maintain our first position in milk production, India will have to face healthy competition from other countries. For this, only producing largest quantity is not sufficient, but the quality of milk and other factors also need to be borne in mind, the
operation flood programme will have to be supported by quality improvement and quality maintenance.

Dairying has brought about socio-economic transformation in Tamil Nadu and is playing a significant role in strengthening rural economy. Majority of milk producers are small farmers, marginal farmers and downtrodden. Dairying has vast potential to generate employment and has helped in alleviating poverty in rural belt. Dairying provides definite and regular income and employment to millions of rural families throughout the year, improving the quality of their life. The milk producers in the Co-operative sector collectively on an average get daily income of Rs.262 lakh (Rs.95, 630 lakh annually) for the milk they supply to the dairy societies which show the importance of this sector in the rural economy.

Tamil Nadu is one of the front line states in milk production and stands at number one position in the coverage of more than 50 per cent of revenue villages under Co-operative ambit. There are 7833 functional primary milk societies with 22.10 lakh members. During 2007-08 average milk procurement by Dairy Co-operative was 26.27 lakh litres per day (LLPD).

Dairying and agriculture are bound together by a set of mutual input-output relationships. Dairying is not an adjunct to the crop-mix of Indian farms, but an integral part of the total farming system. Hence, treating dairy cattle as the backbone of the livestock wealth of our country would not be an exaggeration. Though the dairy industry in India has undergone considerable transformation over the years and is considered the secondary source of income for millions of rural households, in terms of per capita consumption of milk, India still compares poorly among the nations of the world. Therefore in view of ensuring food security, livelihood security and rural development, the Indian dairy sector is a strategic one.

1.2. Need for the study

The need for promotion of dairying in India arises due to several considerations such as low per capital availability of milk prevalence of large scale unemployment and under employment discouraging mixed farming for further utilization of farm products and wastages and increasing the living condition of rural poor, achieving self-sufficiency in the production of milk, milk products and save valuable foreign
exchange. In the ultimate analysis, the need for dairy development in India arises due to various main reasons which stand out prominently as supply of adequate quantity of milk at reasonable price to urban consumers, lack of marketing facilities and extension services. There is poor perception of the farmers towards commercial dairy enterprise as an alternative to other occupations. Owing to lack of proper veterinary extension system there is poor perception to the farmers towards dairy enterprise as a viable alternative to crop husbandry.

An equally important sector is dairy, which needs some support. A majority of the small farmers in India, who do not have good land for agriculture, depend on dairy for supplementary income. Therefore, promotion of dairy sector with cattle and buffalo can generate employment for small farmers throughout the year. Fortunately, India has the largest population of livestock in the world and with the increasing demand for livestock produce, while in 2008-09 the milk production was 108.5 million tonnes, the demand in the year 2022 is likely to rise to 180 million tonnes. This will provide greater opportunity to small farmers to expand their dairy sector.

The dairy sector in its potential, is making impact on the dairy economy, and recommends areas to be encouraged more for research work where it is highly needed. Changes in animal management and animal feeding practices, especially by small dairy farmers, can be instrumental in raising milk yields in the short run. The attempts to enhance production of smallholder dairying are not only important for raising milk yield in the country; they could also become an effective tool of raising incomes of impoverished rural households. Dairy sector is giving self-employment and generating income and livelihood of the rural people therefore, there is a need to improve the production and marketing structure in dairy sector.

1.3. Research gap

The present study covers the production and marketing of milk in the Budalur Block. So far no research has been conducted in the block, particularly in milk production. Studies have been undertaken to analyse the function of co-operative societies but the unorganized sectors were not taken for any other study. Therefore the milk produced by the people in the Block is not accounted for. So the milk that is produced by the producers in that area is being marketed to the household, tea stalls and the milk vendors are not accounted for.
1.4. Motivation for the study

The dairy sectors have made a visible impact on nutritional security and have set models to be emulated by other sectors of agriculture. Dairying, which makes up over 65 per cent of the livestock sector as a whole in value terms, has particularly grown remarkable in onward linkages for collection, processing, marketing. Dairying is part of agriculture, it is far more profitable than any other part of agriculture. In fact, it is more prosperous to be a dairy farmer instead of just being an agriculturist. The cow eats what is wasted in the field and converts the same as a value added product in the form of milk. Today milk commands better advantage when compared to any other agricultural crop. One of the most effective instruments for supplementing farmers’ income and generating employment in the rural sector is dairying.

Dairy animals, apart from their role in milk supply, contribute huge quantity of organic manure, which is one of the major inputs in our agriculture. Dairy farming is also a very important subsidiary occupation. It provides employment to millions of unemployed and under-employed and particularly small farmers and landless labourers. The proponents of the dairy development programme feel that such activity does indeed raise the level of income of the rural poor. In India more than 80 per cent of milk produced in the country in fact comes from small holding and landless farmers. This sector provides additional income and generates job opportunities for 80 million farmer families. In this context this research work has been undertaken to study the production and marketing of milk in Budalur block of Thanjavur district in Tamilnadu.

1.5. Statement of the problem

India is the largest milk producer in the world. The milk production of this country has increased from 17 million tonnes in 1950-51 to 108.5 million tonnes in 2008-09 and the per capita availability of milk has also increased from 112 grams / day in 1968-69 to 258 grams / day during 2008-2009. But still it is low compared to the world average of 265 grams/day. About 80 per cent of the milk produced in the country is handled in the unorganized sector and the remaining 20 per cent is shared equally by cooperative and private dairies. The productivity of the animal is also low
when compared to the world countries. This deficit which is of a very serious nature may affect the health and vitality of the nation, as milk is the only source of animal protein for a large number of people in this country. To meet the nutritional requirements of the people, there is an urgent need to boost milk production. Low productivity has been a major problem of Indian dairying for a long time. It is important to know what policies, and what steps need to be taken for productivity enhancement before investing scarce capital in certain factors which affect productivity.

In Tamil Nadu, the production of milk is low compared to the other states. The milk production has increased from 4752 thousand tonnes in 2003-04 to 5586 thousand tonnes in 2007-08. The per capita availability of milk has also increased from 209 grams/day in 2003-04 to 233 grams/day in 2007-08. In Thanjavur district the milk production was low and not impressive (196.748 thousand tones) in 2007-08 compared to Salem (450.613), Villupuram (334.215) and Coimbatore (333.225) districts. This deficit is due to the cross-bred cows in this district and buffalo milk production was also low. The disparity in dairy sector persists with respect to other indicators of dairy development, such as, proportion of crossbreed population, breeding, feeding and marketing facilities for dairy as well. The growth of milk production is important not merely to improve milk availability, but for improving the livelihood status for the bulk of rural poor in this state. The balanced growth in dairy sector apart from the other factors is also influenced by the Government expenditures and regulations in the sector. The main objective of dairy development is to improve the milch cattle, to provide remunerative price to milk, improvement of the socio-economic conditions of the milk producers, to maintain an effective supply system of the milk and milk products at reasonable price for the consumers. In this context this investigation aims to study the production and marketing of milk in Budalur Block of Thanjavur district and know the problems encountered in the dairy sector on productivity, finance, marketing, feeding, infrastructure, and other problems.
1.6. Research questions

1. What are the characteristics of milk producers in the study area?
2. What is the cost and profitability of milk production in the study area?
3. What are the channels of marketing adopted by the milk producers in the study area?
4. What are the problems faced by the milk producers in study area?

1.7. Objectives

The overall objectives of the present study are to investigate the “Production and Marketing of Milk in Budalur Block of Thanjavur District of Tamilnadu”. With this view in mind the following specific objectives are framed.

- To study the characteristics of the milk producers in the study area.
- To estimate the cost and productivity of milk production in the study area.
- To examine the various channels of marketing adopted by the milk Producers
- To examine constraints experienced by the milk producers in production and marketing and
- To suggest appropriate measures to strengthen the milk production and marketing in the study area.

1.8. Hypotheses

1. There is a insignificance relationship between education level and standard of living of the milk rearers in the study area.
2. There is a positive relationship between feed intake of milch animal and milk yield.

1.9. Theoretical framework for the study

Milk production is predominantly the domain of small holder in a mixed farming system. The milk production in India has increased from 17 million tonnes in 1950-50 to 108.5 million tonnes in 2008-2009. Dairy development in India started from marketing end. Efforts were taken to increase production also. In fact, the Anand cooperative society with its own encouragement to milk producing members in
the form of compounded feed, artificial insemination for breed improvement, health care and insurance together with the training of rural producers, helped the members to reap the socio-economic benefits from such a world in the largest rural dairy development programme popularly known as “Operation flood”.

Operation Flood, a programme that Dr. Verghese Kurien implemented as chairman of the National dairy Development Board in three phases over a 26-year span, created a flood of milk, which eventually led to India becoming the world's largest milk producer, overtaking the US in 1998. Dr. Kurien made innovative use of a World Bank loan, EEC food aid and the internal resources of NDDB to usher in the White Revolution.

Operation Flood: Phase one was during the 1970's. Dairy products were piling up as a major surplus in Europe, a phenomenon in which Dr. Kurien saw both a threat and an opportunity. In the event of these surpluses being dumped in India at rock bottom prices, it would have prematurely destroyed the fledgling dairy sector of the country. The large quantities that India was already importing had eroded domestic markets to the point where dairying was not viable. Kurien ingeniously turned this double-edged sword to his advantage and incorporated it as a golden opportunity into the Operation Flood strategy. It was for the first time in the history of economic development that food aid was seen as an important investment resource. Working as an anti-inflationary measure, it provided a buffer stock to stabilise the Indian market, and was used to prime markets that would later be supplied by domestic production. Funds generated through sale of these commodities were used in the development of 18 rural milk sheds in 10 states and for setting up dairies in the rural hinterlands and in Mumbai, Delhi, Kolkata and Chennai. This led to a 60-per cent increase in milk production, which rose from an estimated 20-million metric tonnes in 1970 to 32 million metric tonnes in 1978. A year-round remunerative market for the milk producers was created and the sale of milk in the major urban demand centers rose by 140 per cent. During this phase, Operation Flood linked 18 of India's premier milk sheds with consumers in India's four major metropolitan cities: Delhi, Mumbai, Kolkata and Chennai.
Operation Flood: Phase two, impressed by the success of the first phase of the project, the government of India decided to continue with dairy development through cooperatives but on a greatly expanded scale. The second phase of the programme was implemented with a World Bank credit of $150 million and commodity assistance from EEC (216,584 metric tonnes of SMP, 62, 402 metric tonnes of butter oil and 16577 metric tonnes of butter) and Rs.280.87 crore which NDDB raised out of its own resources during 1985 to 1987.

The third phase of Operation Flood, undertaken from 1987 to 1996 aimed at consolidating the gains of the earlier phases. The main focus of the programme was on achieving financial viability of the milk unions/ state federations and adopting the salient institutional characteristics of the Amul Pattern or Amul Model Cooperatives. This phase of the programme was funded by a World Bank credit of $365 million, Rs.222.6 crore of food-aid (75,000 metric tonnes of milk powder and 25,000 metric tonnes of butter / butter oil) by the EEC and Rs.207.6 crore by NDDB's own resources. At the end of May 1995, Rs.1, 578 crore had been invested under the three phases of Operation Flood programme. At the conclusion of the third phase of Operation Flood three in 1996, 72,744 district cooperative societies in 170 milk sheds of the country, with a total membership of 93.14 lakh had been organised. The targets set had either been effectively achieved or exceeded.

Phase three (1985-1996) enabled dairy cooperatives to expand and strengthen the infrastructure required to procure and market increasing volumes of milk. Veterinary first-aid health care services, feed and artificial insemination services for cooperative members were extended, along with intensified member education. Operation Flood Phase three consolidated India's dairy cooperative movement, adding 30,000 new dairy cooperatives to the 42,000 existing societies organised during Phase two. Milk sheds peaked to 173 in 1988-89 with the number of women members and 'women's dairy cooperative societies' increasing significantly. Phase three gave increased emphasis to research and development in animal health and animal nutrition. Innovations like vaccine for Theileriosis, bypass protein feed and urea-molasses mineral blocks, all contributed to the enhanced productivity of milk animals. Phase three of Operation Flood (1985-1996) enabled dairy cooperatives to rapidly
build up the basic infrastructure required to procure and market more and more milk daily. Facilities were created by the cooperatives to provide better veterinary first-aid health care services to their producer members.

The farmer owned Amul cooperative in Anand (in Kaira district, Gujarat) was a milestone in the dairy scene because of its integrated approach for production procurement processing and marketing of milk through co-operatives.

As this pattern was considered a model for dairy development, the current government has taken steps to replicate Anand pattern throughout our country as a result the NDDB (National Dairy Development Board) was established in 1965 to transplant the spirit of Anand pattern organizations in many other places of India. Then the NDDB started a project called “Operation Flood” during the period 1970-1996 and its aim was the creation of flood of milk in our villages with funds got from foreign food donations. Producers’ co-operatives were the central plant of the project which sought to link dairy development with milk marketing. The Anand model co-operatives bring the producers in direct contact with consumers eliminating the middleman.

A major programme for genetic improvement, the National Project for Cattle and Buffalo Breeding (NPCBB), was launched in October 2000 to be implemented over a period of 10 years in two phases of five years each with an allocation of Rs. 402 crore and 775.9 crore for phase I phase II respectively. NPCBB envisages genetic upgradation and development of indigenous breeds on priority basis. At present, 28 states and one union territory are participating in the project. Financial assistance to the tune of Rs.398.38 crore was released to these states up to 2007-08. During the financial year 2008-09 Rs.87.37 crore has been released for the implementing agencies under the scheme.

NDDB’s biotechnology laboratory has been a pioneer in animal breeding and genetics, nutrition and feed technology and animal health. The strategy is to upgrade cattle breeds through the integration of artificial insemination. NDDB is supporting ongoing studies to identify mineral deficiencies specific to local areas so that the feed can be supplemented with appropriate minerals. An NDDB initiated fodder seed production programme implemented by farmers helps increase the cultivation of quality fodder through distribution of high yielding seeds.
In the dairy sector quality begins with each individual farmer. NDDB’s clean milk production programme involves intensive training, including the motivation and skills needed for correct milking and milk handling related activities which include preparation of baseline data on raw milk bacteriological quality, raising awareness of good hygienic practices, establishment of models for quality assurance, and the promotion and financing of such stainless steel vessels.

Quality assurance programmes have been introduced in a number of dairy plants such as equipment automates processes, reducing risk of contamination. NDDB is supporting milk unions which seek to achieve international standards through ISO/HACCP accreditation.

Milk trade is a cottage industry providing employment opportunity in rural areas, particularly to the women folk thereby supplementing the family income. The milk producers’ cooperative societies eliminate the middlemen and protect the interest of the producers. The farmers are assured of remunerative price and market support. The institutional frame has three-tier structure with 10041 primary milk producers’ cooperative societies at the village level, the union producers’ cooperative societies at the district level and the federation of district cooperative milk producers’ union at the state level in 2001-02. Under the brand name of Aavin, the cooperative milk producers’ federation (TNCMPF) has made a tremendous achievement in Tamil Nadu. The data on milk products sold (in MTS) during the period 1998-2001 is given below.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Skimed milk powder (SMP)</td>
<td>1,250</td>
<td>5,146</td>
<td>7,427</td>
</tr>
<tr>
<td>Butter</td>
<td>3,043</td>
<td>3,592</td>
<td>2,987</td>
</tr>
<tr>
<td>Ghee</td>
<td>3,890</td>
<td>4,414</td>
<td>4297</td>
</tr>
</tbody>
</table>

While the milk production has reached an all time high in Tamil Nadu, the producers encounter marketing constraints. The infrastructure available for procurement, processing of milk and marketing network are inadequate. Only 15 per cent to 20 per cent of the total milk produced in the state is handled by the organized sector. As most of the milk producers are small and marginal farmers and landless agricultural labourers, they are forced to sell their product at a low price, as the commodity is perishable by nature.
There are 20 dairies functioning at present in Tamil Nadu. 16 of them, function under the control of district cooperative milk producers’ union (DCMPU) and four under the control of Tamil Nadu Cooperative Milk Producers’ Federation (TCMPF). The (TCMPF) has two sperm stations, one at Ootacamund, is meant for cattle and other at Erode is meant exclusively for buffaloes. Out of the 10,041 registered primary milk cooperative societies in Tamil Nadu 7,368 societies are effectively functioning. As of 1999-2000, there are 22.12 lakhs members. Out of total milk production of 45.74 lakh tones, a quantity of 6.22 lakh tones alone (13.6 per cent) is procured by the federation in 1999-2000. With regard to utilization of cow’s milk 88.2 per cent is sold, 8.1 per cent is used for own consumption and 3.7 per cent is converted into milk products as of 1999-2000. The respective figures for buffaloes are 82.7, 13 and 4.3. This is a good ratio because selling milk as milk product is more remunerative than selling milk in the form of milk products only.

Responding to the challenges raised by the WTO, the milk federation / unions in Tamil Nadu approach the national dairy development board for assistance to develop a plan document-vision 2010. They seek to improve the quality of the milk procured, the productivity of the animals, the marketing of the milk and milk products, strengthening the institutional base of the cooperatives and establishing network information.

Quality and availability of cattle feed determine the quality and milk yield of the cattle and buffaloes. There is a fodder shortage in the state, of 30 per cent in the case of dry fodder and 79 per cent in respect of green fodder. As of 1999-2000, the total area brought under fodder cultivation is in the order of 5,888 ha.

1.10. Limitations of the study

The period for the study was too short, covering only one session. It is therefore possible that due to seasonal variations in input cost and the production level, the cost of milk on the farm may be different for other seasons. Majority of milk producers generally do not keep much records hence, the information collection was based on mental recollection of recent event such as procurement rates. The inputs provided by the farmers therefore could not be checked for authenticity. Since schedule was prepared for data collection by enumerators, there may be difference
between actual and recorded data as perceived by enumerators. The rates related to non milk income e.g. income from cow dung etc. were assumed on the basis that there would be assured market accessible to the farmers. No concurrent study was conducted to collect data from market / intermediaries regarding input and milk prices for cross verification. Limited focused sensitization program was organized amongst the milk producers both prior and during the study period. Information related to ownership could not be verified.

1.11. Plan of the study

The thesis is divided into eight chapters. The first chapter includes introductory aspects such as need for the study, research gap, motivation for the study, statement of the problem, research questions, objectives, hypotheses, theoretical framework for the study, Limitations and Plan of the study. The second chapter deals with the review of Literature. The third chapter brings out the profile of the study area, the definitions and concepts, definition of various categories of incomes, database and period of the study, sampling design and statistical tools used. The fourth chapter gives an analysis of characteristics of milk producers in Budalur block. The fifth chapter deals with the analysis of factors determining milk production income. The sixth chapter deals with the analysis of cost and productivity of milk producers in the study area. The seventh chapter brings out the analysis of the various channels of marketing and problems of milk production in the study area. And the last chapter furnishes the major findings, suggestions and conclusions. A small note on the areas for further research is also given.