CHAPTER II

REVIEW OF LITERATURE AND METHODOLOGY

2.1 REVIEW OF LITERATURE

There are many studies on dairying, dairy co-operatives, socio-economic conditions of the members of dairy co-operatives and performance of the District Co-operative Milk Producers’ Union.

V.M. Rao (1982) in his study, “Farmers Benefit from a Modern Milk Cooperative Society” has examined the prospects of increasing income and employment on small and marginal farms through Milk Cooperative Society. He summarized that the percentage contribution made to total farm income and employment by livestock production was higher on marginal and small farms as compared to large farms.¹

B. Subburaj (1987) in his article, “Production and Sale of Dairy Products in Trichy District Co-operative Milk Producers’ Union, Tamil Nadu – A Break-Even Analysis”, concluded that the union is yet to fully utilize the plant capacity and as the union has the best hope of business prosperity, it is the right-time to take up programmes for diversified product promotion such as ghee, butter, ¹V.M. Rao, “Farmers Benefit From a Modern Milk Cooperative Society”, Indian Cooperative Review, July 1982, Vol.XX, No.1, pp.50-59.
cheese, cream etc., which will not only supplement its business profitability but also open new avenues for milk production and marketing.²

Jawana Ram (1987) in his study, “Organization and Working of Cooperatives in Rajasthan – A Case Study” suggested that the management of the union should hold regular meetings so that the functioning becomes democratic and effective and the union should make necessary arrangements to collect milk twice in a day from all the Dairy Cooperative Societies so that the milk producers may have more milch animals and may adopt new techniques of dairy farming.³

R. M. Mattigatti and et. al. (1990) in their work, “Performance of Milk Producers’ Cooperative Societies (MPCS) in Dharwad District Karnataka – A Qualitative Analysis” made some policy implications i.e., i) the directors of the societies should consider the working ability of the secretary while appointing, ii) the milk routes should be cut short as far as possible to facilitate timely milk procurement operations, iii) societies should provide better technical and input services along with better prices and iv) the higher authorities of the Union should see that the malpractices prevailing especially at the chilling centres are curbed


and some forward to help the societies to build sound relationship with the Union.  

A.K. Sharma and Kuber Ram (1991) in their study, “Institutional Credit and its Impact on Dairy Enterprise of Weaker Section Households” concluded that the percentage of borrowing institution of credit from different sources constituted only 18 per cent of the total households of weaker sections and if more credit facilities along with the suitable dairy extension and assured marketing programmes are available to this section of rural community, they can improve their economy and generate higher quantum of marketed surplus of milk required by dairy industry.  

B. R. Joshi and et. al. (1991) in their article, “Economic Appraisal of Dairy Cooperative Union in Arid Region of Rajasthan” concluded that the management of milk collection, procurement, processing, marketing and other similar activities for milk and milk products under cooperative structure would be an economic viable proposition. Further they added that with the help of better grazing, breeding and watering programmes for livestock, better management of plant and

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lesser wastage, the milk and milk products will continue to retain its economic edge over other similar enterprises.\textsuperscript{6}

Premkumari (1992) observes in her study, “A Study of Market Planning of Milk Co-operative in Himachal Pradesh – A Case Study of Shimla Unit” that a detailed study of four P’s of marketing mix viz., Production and Procurement, Price, Promotion and Place of Shimla unit has been made. She added that the large quantity of milk production in the Himachal Pradesh is in the hands of millions of small producers scattered all over the state and to most of them it is only supplementary enterprise only.\textsuperscript{7}

R.S. Bhople et. al., (1992) make the following observation in “Socio-Economic changes in IRDP Beneficiaries : As A Result of Dairy Co-operatives.” The dairy co-operatives have proved their worth in increasing the income and upliftment of socio-economic position of the dairy farmers in the rural social system. The increase in income and investment of income generated from dairy


business was found to be significantly higher in case by beneficiaries domesticating both cows and buffaloes.\(^8\)

D.S. Jithendra Kumar and H.G. Shankara Murthy (1992) aver in their article, “Impact of Dairy Co-operatives on Income and Employment in Chittur District, Andhra Pradesh – An Economic Analysis”, the income earned from dairying was more by the members of societies than non-members. It was found that agricultural labourers and non-agricultural labourers earned more income from dairying than small farmers who earned more in crop production. The employment created for members was significantly more compared to non-members in the study area. Thus, the dairy co-operatives have contributed in generating more income and employment to the dairy farmers.\(^9\)

Benhur Dayakar Rao and C. B. Singh (1993) in their study, “Impact of Co-operatives on Dairy Development in Andhra Pradesh”, suggested that efforts should be directed to increase the quantum of cattle feed production and sale to meet the feed requirements of dairy animals of the rural households not only in the extension areas but also in the control area. They concluded that by and large


the growth and performance of dairy co-operatives in the Guntur district was satisfactory. But, in case of certain parameters, which have recorded low growth rates, concerted efforts ought to be made areas to achieve higher growth so as to bring about desirable socio-economic change in rural through dairy development efforts under the programme.\textsuperscript{10}

Rajesh Agrawal (1993) in his article, “Fund Flow Patterns in Indian Co-operatives from 1977 to 1980”, attempted a study on fund flow patterns of four different sectors viz. sugar, dairy, spinning and primary agricultural co-operative societies (PACS) were carried out based on “statistical statements relating to the co-operative movement in India”, published by R.B.I. and NABARD. The study was undertaken for milk supply unions.\textsuperscript{11}

Kuldeep Singh and N. K. Verma (1994) in their paper, “Fluctuating in Milk Availability and Its Impact on Procurement Cost” attempted to (i) study the fluctuations in milk availability and estimate the cost of milk procurement and (ii) establish cost-volume relationship and analyse the sources of scale effect in milk procurement. They remarked that the milk union procured 1,15,32,359 kg. of milk during the co-operative year 1987-88. Cow milk accounted for 17.61 per


cent of total milk supply, the rest being buffalo milk significant variations in milk procurement and corresponding costs during different months were observed.\textsuperscript{12}

P. Sivaprakasam (1994) in his work, “Employees’ Absenteeism in Co-operative Sector – A Study”, concluded that the higher rate of absenteeism was due to the maximum utilization of casual leave by the employees and one the major causes for absenteeism was environmental factors of the employees.\textsuperscript{13}

Manob Kanti Bandyapadhyay (1996) in his doctoral thesis, “Dairy Co-operative and Rural Development (with special reference to comparative study between the Kaira District Co-operative Milk Producers’ Union Ltd., and the Himalayan Co-operative milk Producers Union Ltd.),” found that the financial position of Amul is much better than Himul.\textsuperscript{14}

A. Sundararajan (1997) in his M.Phil., study, “Operational and Financial Performance of Erode District Co-operative Milk Producers’ Union Ltd., Chithode (with reference to the Production, Marking, Profitability, Working


Capital and Fixed Assets Performance)", suggested to improve the performance of the union by decentralization of power to various departments and the co-operatives should make use of planning and forecasting tools to plan its production and sales for the forthcoming years.\footnote{15}

T. Vannia Rajan (1997) in his Ph.D., thesis, “Production and Marketing of Milk in Madurai District”, suggested that the government should decentralize the Milk Co-operative Union and limit it at the Milk Society level in order to reduce the marketing cost and the stages in marketing of milk which will enable the society to produce higher procurement price to the producers.\footnote{16}

C. Krishnan (1997) in his paper, “Dairying for Rural Development : A Study” concluded that the scale of finance given under dairy scheme must be enhanced so as to enable the beneficiaries to purchase quality animals. This will have great bearing on the economics of dairying.\footnote{17}


Hemlatha Patil (1997) in her study, “Women Entrepreneurs in Agro Based Vacation in Dairy Enterprises – An Economic Analysis”, stated that 88 per cent of women entrepreneurs were illiterate and 12 per cent had education upto primary level. She emphasized with their needs such as training, finance, cooperation and encouragement from men at home, society and government organisations.\(^{18}\)

Surendra Nath Behera (1998) in his study, “Role and Performance of Dairy Co-operatives in Rural Development – A Micro Level Study of Keonjhar District Co-operative Milk Producers Union”, recommended that the changes in the style, system, approach, concept, belief and values and quality cows must be provided to the beneficiaries of their own choice, rather than imposed on them. Further he added that the periodic action plan need to be made taking into account the constraints faced. ‘Co-operation has failed but co-operation must succeed’\(^{19}\).

Deepak Shah (1998) in his article, “Awareness and Attitude of Members of Milk Co-operatives in Maharashtra”, analysed producers’ response and attitude towards becoming a member of a milk co-operative society and the benefits that might accrue to them from such an action. His study also places an onus to


analyzing the various problems that are usually faced by the producers in availing input and extension facilities through the medium of co-operatives.\textsuperscript{20}

Virender Singh and K.N.Rai (1998) in their study, “Economics of Production and Marketing of Buffalo Milk in Haryana”, concluded that the feed and fodder maintenance cost accounted for 58 to 68 per cent of the total cost in dry zone and 52 to 67 per cent in wet zone. He further added that the establishment of milk co-operative societies in the rural areas had positive impact on the market for surplus of milk.\textsuperscript{21}

M.K. Radhakrishnan (1998) in his Ph.D. thesis, “A Study on the Performance of Dairy Co-operatives in Erode District of Tamil Nadu”, suggested that i) there should be continuous farmers orientation programme, infertility camps, and training of the society personnel, ii) milk yield competition should be conducted at the society level to promote the interest of the producers, iii) milk producers should have strong commitment and loyalty towards the M.P.C.S. and they should patronize the society to the maximum possible level, and iv) M.P.C.S. employees are to contact all the milk producers in their area personally with the


help of field staff from the union for increasing the milk production and collection. He concluded that the co-operative sector would serve only if its leaders serve it with honesty and the instruments of development are kept in the hands of the farmers themselves.\textsuperscript{22}

Deepak B. Bhamare and Prof. V. S. Agrawal (1999) in their article, “A Study of the Capital Structure of Dairy Co-operative in Maharashtra : A Case Study related to Dhule District” found that the composition capital structure by sources differ for different size groups of societies, capital structure of sample societies in aggregate as well as by their size group shows that the tendency of larger proportion in ownership capital is over 66 per cent and rest of 34 per cent is borrowed capital, specific fund percentage is higher as compared to other funds, borrowing from the government is one of the most important sources of raising working capital. Further they suggested that dairy society has increased share capital and reserves fund to increase its working capital. As soon as working capital increases, dairy society has utilized full capacity.\textsuperscript{23}


M.N. Sehgal (2000) in his article, “The Jammu Cooperative Milk Federation Ltd., - A Study” stated that the thousands of litres of milk is being collected by wholesale merchants and individual halwaces in the city and hundreds of milk vendors are daily supplying thousands of litres of milk to the citizens. The Milk Federation is collecting a meagre quantity of about 10,000 litres while sub-standard and unchecked milk is being supplied to the consumers. The Milk Federation supposedly a cooperative venture has failed to live up to its objectives, both towards the producers and also consumers. There is a strong case for a thorough review of the organization for rehabilitation as sound financial and cooperative principles. There is need to establish credibility of cooperative benefits amongst the farmers through honest and dedicated management. Better incentives to workers, administrative restructuring for economical, and efficient performance, removal of government constraints in day to day working and decentralization of decision making and financial freedom to the management to run the venture as a competitive corporate enterprise, need to be considered seriously. Further he added that the government needs to adapt a positive and pragmatic approach to cooperative venture of milk federation to achieve the social obligation towards the people of the state.24

V. B. Kakade and D. S. Bagade (2001) in their study, “Profit and Loss of Dairy Industry: A Case Study of Malshiras Taluka” concluded that per cow per day a large farmers’ milk production cost is very high due to high investment on cattle and cattle shed and higher expenditure of feed, fodder, concentrates and more dependency on labour. Further they added that on the other hand less milk producers’ milk production cost is very less due to personal attention and less investment in cattle and cattle shed, less expenditure on feed and fodder and concentrates. They also stated that dairying provided more employment to the youngsters. 56 milk producers belonging to the age group of 31 to 45 are among 100 milk producers and there are only 13 per cent illiteracy among 100 milk producers. 25

Chandrashekar and et. al. (2001) in their article, “Training needs of Dairy Farmers” found that among the different subject areas in dairying common disease and treatment, care of newly born calf, cattle housing and cleanliness, veterinary first aid, information on artificial insemination, and marketing of milk were the important training needs occupying first six ranks i, ii, iii, iv, v and vi respectively. Further they stated that the other aspects like animal selection, calf

feeding, digestive problems, heat symptoms in cattle and balanced feeding were placed in vii, viii, ix, x and xi ranks respectively.\textsuperscript{26}

Anjani Kumar et. al. (2001) in their work, “Trade in Livestock Products in India : Trends Performance and Competitiveness” concluded that the export of meat and meat preparations showed most stable and promising performance. To give a further boost to it, various sanitary and phytosanitary measures should be taken up vigorously to ensure international hygienic standards of our livestock exports particularly international competitive, domestic processing efficiency has to be improved substantially.\textsuperscript{27}

P. P. Pawar et. al. (2002) in their article, “Economics and Management of Milk Co-operative Union – A Case Study in Ahmednagar District” observed that per day average milk procured declined steadily during the period under study. It happened due to stiff competition as a result of economy liberalization policy of the government, that has affected milk collection. However, the decreasing percentage of curdled milk indicated better managerial efficiency of Babhaleshwar Dudh Sangh whereas the different cost items showed an increasing trend due to price rise of input materials and services required for procurement,  

\textsuperscript{26}Chandrashekar et. al., “Training Needs of Dairy Farmers”, \textit{Rural India}, April 2001, Vol. 64, No.4, pp.73-74.

processing distribution and related managerial activities. Their analysis in general showed that the relative efficiency of Sangh was declining.  

D. Narayana (2002) in his study, “Dairying in Malabar : A Venture of the Landowning Based on Women’s Work” chose three districts viz., Wayanad, Kozhikode and Palakkad. He concluded that the comparison of caste, education and land holding of milk society farmers with non-milk society farmers points to a larger proportion of households belonging to the backward caste, being less educated and holding lower size of land are not able to participate in dairying. Further he added that illiteracy might not be a factor in Kerala but land ownership could be one, as among the lower size class or land owners a smaller proportion seemed to be keeping cattle.

Prabhakar Sharma and Joglekar (2002) in their article, “Marketing of Milk – An Opinion Survey of Consumer Perceptions, Rajahmundry, A. P.” suggested that i) in the Rajahmundry town areas round the clock milk supply is very much required. Some booths with the preservation facilities would improve the sales in a significant way, ii) the Godavari Co-operative Dairy should set out a publicity

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net work for different milk and milk products, iii) Market research is to be
conduct to find the demand for milk and to explore the marketing potentialities for
milk and milk products, iv) Effective training should be provided to the vendors
and personnel in order to improve the sales and techniques of marketing and v) a
dairy advisory board may be constituted comprising representatives from the
concerned organizations and the public.30

B. S. Benni (2003) in his paper, “Resources Use Efficiency of Members of
MPCs in Karnataka”, summarised his major findings in broad titles like Milch
animal resources, Animals in Milk, Land resourcing, Labour resources,
composition of the families, Mean age and Educational Status of sample
members, Occupation, Human resource utilization and Land Utilization and
Cropping Pattern. He concluded that the members of MPCs of the Charwad
District are richer in terms of resources and its use than the members of MPCs of
the Uttar Kannad district.31

and Marketing of Milk in Central Uttar Pradesh” concluded that i) Mostly, small

30 Prabhakar Sharma and Joglekar, “Marketing of Milk – An Opinion Survey of
Consumer Perceptions, Rajahmundry, A. P.”, Indian Journal of Marketing, March-
April 2002, Vol.XXXXII, No.3-4, pp.10-13;27.

31 B. S. Benni, “Resources Use Efficiency of Members of MPCs in Karnataka”,
The Maharashtra Co-operative Quarterly, October–December 2003, Vol.LXXXXXI,
No.7, pp.13-17.
producers are members of the cooperative society and most of the large and medium producers dispose of their surplus milk through direct sale, ii) Dairy enterprise is more profitable to the urban than the rural producers, iii) Considering per litre price of milk, marketing through cooperative societies is more profitable for producers than other channels, iv) Problem of transportations, delay in payments and high maintenance cost were found to be prominent problems among different categories of producers. Similarly, adulteration, unhygienic conditions and interruption in supply were problems and v) though each and every household in the urban area depends on packet milk, maximum number of consumers procure milk through vendors.\(^\text{32}\)

P.A. Koli (2003) in his paper, “Co-operative and Reduction of Poverty : A case study of Warana Milk Co-operative Union” concluded that the success of Warana Milk Co-operative Union is due to the dynamic leadership of Late Shri.V.A. Alias Tatyasahets Kove and his followers. His leadership is still the kind pin behind the success of co-operative institutions in Warana area. Shri Kove had created a cadre of social workers having good working knowledge of real development. The co-operative principles have been put in use in their real sense. Again the loyalty of the members and efficiency of the employees is an important factor behind the success. If we want to strengthen democracy, we

should support the cooperative milk societies and their unions like Warana Union.\textsuperscript{33}

V. M. Rao (2003) in his study, “Women Dairy Cooperatives in Rajasthan Success story of a Women Dairy Project” that Women’s Dairy Cooperative Societies (WDCS) provided several benefits which include regular procurement, health care for animals, training programmes, medicines for self and children, vaccination for animals, subsidized cattle feed, fodder seeds, income generating activities and adult education. Women are happy with these benefits which is reflected in higher intake of quality food, improved health conditions, better clothing, enhanced savings and finally leading to increased status. There is a positive correlation between awareness among women and successful WDCSs. Women are now realizing their place in the house and village, and exerting pressure to change age-old prejudices. Some of them also started self help groups and were operating internal loaning.\textsuperscript{34}

N. R. Lalwani and V. K. Choudhary (2003) in their article, “Production, Consumption and Marketed Surplus of Milk Under Members and Non-members of Dairy Cooperatives in Raipur District of Chattisgarh” concluded that


production is higher among members but consumption is higher among non-members. Further they added that the members of the society dispose 92.08 percent milk as a marketed surplus, whereas, non-members dispose nearly 87 percent and most of the share of marketed surplus goes to the dairy co-operative (61.72 percent). As regards consumption pattern of milk among the sampled households, average per capital consumption is 222ml for members, and 188 ml for non-members.  

Basavaraj S. Benni (2003) in his study, “Milk Producers’ Co-operative Societies in Karnataka – Performance Indicators”, suggested that the MPCS should expand their veterinary services and he further added that the MPCS should also make suitable arrangements for providing veterinary facilities in the emergency situations at reasonable fees.  

Basavaraj S. Benni (2003) in his Ph.D. thesis “Dairy Co-operative Societies in Karnataka” concluded that the total assets, gross profit, total purchases, number of animals treated by veterinary doctors, total sales, milk

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purchases, share capital, current assets and sales of cattle feed were most
dominant among the principal variables.\textsuperscript{37}

Attitude Towards Aavin Milk and Milk Products – A Study”, suggested that
round the clock service of the society will be preferred by the customers and to
expand chilling centres with packing facilities to market hygienic and improved
quality of milk.\textsuperscript{38}

M. Sivasubramanian (2003) in his article, “A Study on Per Capita Milk
Consumption Among Consumers” suggested that the Total Quality Management
(TQM) is of vital importance. In the first stage, quality of milk should be tested at
the time of procurement. In the second stage, the procured milk should be
transferred to the milk chilling centres as quickly as possible in order to prevent
infection. The successful adoption of total quality management depends on
proper education, suitable training and in-service training from time to time in


accordance with the changing scenario. Thus, everyone has to be made responsible for the quality and quantity.  

B. Ganesh Kumar (2003) in his article, “Technological Change in Dairy Farming: A Case Study of Tamil Nadu”, concluded that the production function analysis indicated that milk production would be reduced if dry fodder was fed more to the cattle. From the geometric mean level of milk yield and input use, it was evident that crossbred cows were being maintained better and hence they yielded more milk than buffaloes and indigenous cows did in the study area. The study also clearly indicated the economic advantage of rearing crossbred cow because of their higher milk yield.

P. Muruganandan (2004) in his study, “Performance Appraisal of Thatchur Milk Producers’ Co-operative Society” suggested that i) the society can include more villagers in the district to enroll membership, so that more villages will be benefited, ii) the society should take all necessary steps to purchase and supply high yielding varieties of milch animals, iii) in order to benefit the local population, the society can start a few retail sales outlets. This will help to increase the profit of the society, iv) the society has to conduct awareness camp

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on milk production in order to benefit the local people, and v) the collected waste
dung is utilized as manure and fuel by the members. The society has to take steps
to educate the members to produce gas for cooking and good natural manure for
their plants.\(^{41}\)

M. N. Ray et. al. (2004) in their study, “Socio-Personal and Economic
Profiles of the Dairy Farmers in the Kamrup District of Assam”, concluded that
the majority of the respondents were middle aged, illiterate having undergone not
even a single training with medium level of experience, low social participation,
with medium sized nuclear type of farming, marginal land holding, medium herd
size, medium level of income and medium milk yield per day.\(^{42}\)

Societies : Constraints of Milk Production Members”, identified the important
problems of marketing in dairying as malpractices from society, no provision of
advance payment for milk and the considerable distance of the co-operative
societies from home. The important psychological problems are the perception

\(^{41}\)P. Muruganandan, “Performance Appraisal of Thatchur Milk Producers’ Co-
operative Society”, \textit{Tamil Nadu Journal of Cooperation}, May 2004, Vol.4, No.7,
pp.11-14.

\(^{42}\)M. N. Ray and et. al., “Socio-Personal and Economic Profiles of the Dairy
Farmers in the Kamrup District of Assam”, \textit{Rural India}, April 2004, Vol.67, No.4,
pp.61-64.
that the society is meant for influential people, lack of knowledge on participation and lack of co-operation and co-ordination among the members.\footnote{43H. Chaudhary and J.S. Panwar, “Dairy Co-operative Societies : Constraints of Milk Production Members”, \textit{The Indian Journal of Social Work}, April 2004, Vol.65, No.2, pp. 263–272.}

B. Subburaj et. al. (2004) in their study, “Influence of Demographic Dynamics and Socio-Economic Dimensions of Members of Dairy Cooperative Societies in Dindigul District – An Empirical Study” have suggested that the low level of education of members and non-members has hampered growth and development of dairy cooperative sector, thus the district cooperative union can intensify their education and training programme to members and non-members. Further, they added that the low level participation in the cooperative management and cooperative management business activities are not a good indicator of growth, therefore, the dairy cooperative organizations must motivate and encourage its members to be fully active in the management of dairy business activities.\footnote{44B. Subburaj et. al., “Influence of Demographic Dynamics and Socio-Economic Dimensions of Members of Dairy Cooperative Societies in Dindigul District – An Empirical Study”, \textit{Indian Cooperative Review}, October 2004, Vol.42, No.2, pp.99–120.}

S. K. Bhanj and Hema Tripathi (2004) in their paper, “Strategic Interventions Through Dairying for Rural Development”, concluded that people working in dairy sector have demonstrated their commitment and devotion to
bring India, the honour of being the number one milk producer in the world. The next phase of battle is on. They have to work for more effectiveness and efficiency in per unit milk production, which is much harder and a challenge to be won.\(^4\)

C. Gnana Desigan (2004) in his article, “Production and Marketing of Aavin Milk and Milk Products – A Study” has suggested that to improve the economy of the villagers the government should take immediate steps to provide loans at lower interest rate for purchase of milch animals and to compete in the global market. Indian milk producers have to ensure the quality of milk and milk products in international standards. Further he added that to adopt farm coolers for instant cooling of milk at village level.\(^5\)

P. Paramashivaiah and S. Aravind Kulkarni (2004) in their study, “Consumer Attitude towards Pasteurised Milk : A Case Study” concluded that suppliers of pasteurized milk should introduce smaller packs (say 250 ml) in rural


areas and lower the price of their best quality milk i.e., full cream milk, to make it more affordable for the poor rural consumers.\textsuperscript{47}

A. K. Pande et. al. (2005) in their study, “Performance Evaluation of Raipur Dugdh Sangh Sahkari Maryadit in Rural Dairies of Chattisgarh State”, suggested some policy measures that i) the procurement of milk was not sufficient to run the dairy plant with full capacity; it was due to lower prices paid by RDSSM / MPCSs with special reference to competitive market situations. Thus, RDSSM should provide better price to their milk output, which will promote the sale of milk towards MPCSs / RDSSM so that dairy plant may run upto the optimum (break-even) level, ii) the wide gap existing between producer’s and consumer’s milk price, was due to the involvement of a large market net work which induced more cost for collection of milk, which can be reduced so that the producer can receive more share of price paid by consumers for milk and iii) the cultivation of green fodder was a major problem to rear the crossbred / improve milch cattle; it is due to poor irrigation facilities which do not support fodder cultivation. Therefore, it should be generated through welcoming the private and public investments.\textsuperscript{48}


V. M. Selvaraj and M. Muthu Deivakani (2005) in their study, “Human Resource Development in Cooperative Milk Supply Society, Tirunelveli”, suggested that i) the management must take responsibility to aim and equip officers and clerks, ii) salaries of the employees must be periodically revised, iii) The superiors should grant due recognition on the basis of a fair performance appraisal, iv) Job sharing and temporarily altered assignments would be helpful, and v) Job satisfaction is an important factor related to aspects like job involvement, area, organization, commitment, etc. Further they added that the management of any institutions should conduct job satisfaction surveys at least once in two years.\textsuperscript{49}

E. Sulaiman and Vijaya Chandran Pillai (2006) in their article, “An Assessment of Quality of Services of Dairy Cooperatives in Kerala with Special Reference to Tiruvananthapuram District” found that even though the dairy cooperatives are rendering services they are not up to expectations. Majority of the farmers are not satisfied with the various efforts of the societies for improving the efficiency in the marketing of milk produced by the farmers. The farmers are still facing problems in the area related to low procurement price of the milk,

partial collection of milk, indifferent attitude of the staff, lack of transparency in the quality inspection and delay in getting sales proceeds.  

Sukhpal Singh (2007) in his study, “Marketing of Liquid Milk : A Case Study of Ahmedabad Milk Market”, concluded that the dairy industry and milk market in Ahmedabad show that it is only the small scale and traditionally well enriched unorganized sector players who have been able to move to the organized and branded market in milk due to various factors like understanding of the local market, lower overheads, innovation in marketing and selling, and small size. The others who went for large plant capacities failed due to procurement problems. He further added that the private operators in the organized and unorganized dairy sectors in India use a range of strategies to build advantage like making timely cash payment to producers; by offering higher price than that offered by the co-operative in summer and lower price in winter; by operating an efficient and tight collection and transport system.  


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level of education, family income and their personality traits have a cumulative impact on the performance of dairying and he suggested that the level of education among the owners can be enriched with the help of some basic education programmes. The importance of family income should be taught among the owners of the farms.\textsuperscript{52}

N. Rangasamy and J.P. Dhaka (2007) in their article, “Milk Procurement Cost for Co-operative and Private Dairy Plants in Tamil Nadu – A Comparison” have suggested some policy measures like the following: i) Co-operative dairy plant should make regular payments or advance payments to milk producers, members and can avoid members selling milk to private dairy plants or milk vendors, ii) Efforts should be made to install bulk milk coolers in rural areas to facilitate reduction in transport cost and iii) Imparting training about clean milk production to dairy farmers at Milk Producers’ Co-operative Society level will improve the quality of milk procured.\textsuperscript{53}

N. Rangasamy and J.P. Dhaka (2007) for their study, “Economics of Value-Added Dairy Products Manufacturing by Co-operative Plant in Tamil Nadu” purposively selected Tirunelveli district and concluded that more value-       


added dairy products like butter and ghee were more profitable than less value-added liquid milk varieties, viz., standardized milk, toned milk and full cream milk. Dairy products like flavoured milk and milk peda earned negative margins due to the lowest quantity of products manufactured and sold than the other dairy products. Hence, the co-operative dairy plant should utilize full plant capacity and replace old milk plant machineries and equipments to reduce the operational costs and improve operational efficiency of the dairy plant. To employ qualified persons in the co-operative dairy plant, efforts should be made to recruit qualified persons, which would improve the handling knowledge of dairy products. Importance should be given to manufacture higher quantity of value-added products without compromising on the quality to earn more profits. The co-operative dairy plant should bring down their operational cost by avoiding superfluous expenses and reorient its product mix according to changing market environment.54

Sushila Kaul (2007) in her study, “Analytical Study of Marketing of Milk Through Co-operative in India”, indicated that the co-operatives have done well in the western and northern parts of the county. The eastern region consisting of Assam and Sikkim have lagged behind. The causal factor for regional variation indicated that states having higher per capita income have better spread of co-

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operatives, so also with respect to the number of operational holdings in the states. This may be due to better roads and other transport infrastructure that have discouraged the formation of co-operatives because these enable farmers to dispose their produce individually. Further, she added that the co-operatives have emerged as a better option for organizing distribution of milk in the rural areas. The future of dairy farmers lies in strengthening dairy co-operatives in those states which lack these facilities.\textsuperscript{55}

J. Sadeesh et. al. (2007) in their article, “An Economic Analysis of Marketing Efficiency of Milk in Puducherry Region in Union Territory of Puducherry”, concluded that among the various problems in milk production the high cost of feed was ranked as the major constraint faced by the farmers. The non-availability of storage facilities was the primary constraint faced by dairy farmers in the marketing of milk followed by non-availability of green fodder, lack of improved breed of milk animals, lack of information about various development programmes etc.\textsuperscript{56}


Gilson John (2007) in his Ph.D. thesis, “Private Sector Dairying in Kerala: A Socio-Economic Analysis with Special Reference to Ernakulam District”, recommended the need for publicity regarding the advantages of milk consumption, the aspect of product diversification to have better profit margin, the new mode of packing, the product to capitalize an sight purchase, the inclusion of dairy farming technology in the curriculum of secondary education, and the depoliticization of the dairy Sangham.\textsuperscript{57}

R.O. Olekar and Dr.A.S. Shiralashetti (2007) in their study “Cooperative Movement in India” concluded that the progress and development of Co-operatives have not been upto expectation. The Co-operatives in India have been facing many challenges during WTO regime. Therefore, everyone should fight against the WTO challenges by reforming laws and policies towards co-operative development in the interest of the economic development of India in general, and members of the co-operatives in particular.\textsuperscript{58}

Ashutosh Verma (2008) in his study, “Working Capital Management in GCMMF Vis-A-Vis Dairy Industry” observed that there were GCMMF able to have a better turnover of its current assets as compared to the companies in the


\textsuperscript{58}R.O. Olekar and Dr.A.S. Shiralashetti, “Cooperative Movement in India”, \textit{Kisan World}, August 2007, Vol.34, No.8, pp.39-42.
industry. However, this turnover is partially due to the lower investment in its current assets as reflected by a lower current ratio for GCMMF. Therefore, it is to be viewed whether this lower inventory and its higher turnover may not be at the risk of the customers not being able to get the product at the milk parlors and thereby a subsequent loss in revenue for GCMMF. Further, he added that one significant variation between GCMMF and the industry is credit period extended and obtained. Industry is obtaining and extending a much higher credit period. GCMFF ultimately operates through its primary credit cooperative societies and therefore it needs to make payments to its farmer members promptly. However, given the competitive scenario GCMMF needs to seriously revise its credit policies so as to maintain the competitive edge and also to serve the interest of poor milk producer farmers.  

S. B. Kolte (2010) in his article, “Women Empowerment – A Study of Hirkani Women’s Multi State Dairy Co-operative”, attempted to study about Hirkani Mahila Sahakari Dudh Utpadak Society Ltd., and found that at present there are 152 members in the Hirkani Mahila Sahakari Dudh Utpadak Society Ltd. It is run only by women’s organisations and all the posts of office bearers are held by women members. Further he added that the Hirkani Mahila Sahakari Dudh Utpadak Society Ltd., has many future plans like: i) Scientific training for cattle

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farming, ii) Management of Collection Centres, iii) Training women to use automated devices for grades, fat, degree and iv) Computerized billing system etc.  

2.2 METHODOLOGY

The present study has been carried out on the basis of data and information generated from both primary and secondary sources.

Primary Data

In order to have an in-depth study of the research problem the first hand information was obtained from the members of the Dairy Co-operatives as well as from officials of the Dairy Co-operatives in the study area using interview schedules framed for the purpose. The primary data were generated by sampling method. The sampling survey helped to generate all relevant data and information from the members of Dairy Co-operatives and Officials of Dairy Co-operatives in the study area.

\[60\]

Sampling Design

For the selection of the sample Dairy Co-operatives (DC), the proportionate stratified random sampling technique was adopted. Tirunelveli district, the study area, has 19 blocks and 312 milk societies. Out of the 19 blocks, five blocks have been selected namely Radhapuram, Nanguneri, Kuruvikulam, M.N. Nallur and Manur which have a large number of milk societies. The researcher has selected 300 members from five blocks on the basis of proportionate random sampling method. The following Table 2.1 presents the details of sample distribution.

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Name of the Selected Block</th>
<th>Total Number of Milk Societies</th>
<th>Total Members</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Radhapuram</td>
<td>45</td>
<td>4198</td>
<td>70</td>
</tr>
<tr>
<td>2</td>
<td>Nanguneri</td>
<td>44</td>
<td>3974</td>
<td>67</td>
</tr>
<tr>
<td>3</td>
<td>Kuruvikulam</td>
<td>38</td>
<td>3792</td>
<td>63</td>
</tr>
<tr>
<td>4</td>
<td>M.N. Nallur</td>
<td>30</td>
<td>3137</td>
<td>52</td>
</tr>
<tr>
<td>5</td>
<td>Manur</td>
<td>25</td>
<td>2905</td>
<td>48</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>182</strong></td>
<td><strong>18006</strong></td>
<td><strong>300</strong></td>
</tr>
</tbody>
</table>

Source: Compiled from Records of Selected Dairy Cooperatives, Tirunelveli Dist. 2009-2010.
Period of Study

The research study covers eleven financial years from 1999-2000 to 2009-2010 for secondary data. In case of primary data, the study period is 2009-10. The survey was conducted by the research scholar herself during April-June 2010.

Secondary Data

The data relating to the Dairy Co-operatives were collected from various published sources like standard textbooks, journals, magazines, web pages, periodicals and newspapers. Further, data relating to the Tirunelveli District Co-operative Milk Producers’ Union Ltd., could be generated from the official publications in the form of Annual Reports, Audit Reports, Handbooks, Manuals and Pamphlets. The researcher personally collected all necessary data with the help of officials in the Union and Dairy Co-operatives in the study area.

Analytical Tools

The data collected from different sources were processed according to the objectives laid down for the study. The collected data were first transformed manually to a master table which formed a convenient all-time reference for all further tabulations.
In order to analyse the operational performance of Tirunelveli District Co-operative Milk Producers’ Union (TDCMPU), the average and stability (fluctuations) over a period under study, the arithmetic mean and coefficient of variation were computed by using the following formulae:  

\[
\text{Arithmetic Mean (} \bar{X} \text{)} = \frac{\sum X}{n} \quad \text{............. (2.1)}
\]

where,

\(X\) = Value of the variable,

\(n\) = Number of years.

\[
\text{Coefficient of Variation (\%)} = \frac{\text{S.D.}}{\bar{X}} \times 100 \quad \text{............. (2.2)}
\]

where,

\(\text{S.D.}\) = Standard Deviation,

\(\bar{X}\) = Arithmetic mean.

To analyse the trend and growth of operational performance variables, the following linear and semi-log trend equations have been fitted:  

\[
Y = a + bt \quad \text{..................(2.3)}
\]

\[
\text{Log} \ Y = a + bt \quad \text{............... (2.4)}
\]

---


where,

\[ Y = \text{Value of variable}, \]

\[ t = \text{Time variable}. \]

The above model (2.3 and 2.4) was computed by the method of least squares.

The following formula has been used to calculate compound growth rate (CGR).

\[ \text{CGR} \% = [\text{Anti log } b-1] \times 100 \] ........................ (2.5)

In order to assess the contribution of members to family income, the following mathematical formulations were used for multiple regression analysis.

\[ \log Y = \beta_0 + \beta_1 \log X_1 + \beta_2 \log X_2 + u \]  .... (2.6)

where

\[ Y = \text{Total family income (in Rupees)} \]
\[ X_1 = \text{Earnings of members (in Rupees)} \]
\[ X_2 = \text{Earnings of their parents / spouses (in Rupees)} \]
\[ u = \text{Error term or unexplained variations of total family income associated with the left out variables.} \]

\( \beta_0, \beta_1 \) and \( \beta_2 \) are the parameters to be estimated.
The above model was estimated separately for members of the rural and urban area by the method of least squares.

The number of members who had that facilities were considered for calculating the Deficiency Index (DI) at pre and post membership period separately. The Deficiency Index (DI):

\[
DI = \sum_{i=1}^{n} \frac{X - X_i}{n} \quad \text{------- (2.7)}
\]

Whereas

\( X \) = Number of samples x number of variables = Expected value

\( X_i \) = Actual values of the variables

\( n \) = Number of variables taken for the study.

In order to examine the relationship between the level of attitude of the members towards the performance of dairy co-operatives in Tirunelveli district and the profile variables of the members, the Chi-square test has been used. It is calculated by adopting the following formula.

\[
\text{Chi-square} = \sum \frac{(O - E)^2}{E} \quad \text{with (r-1) (c-1) degree of freedom \ldots (2.8)}
\]

Where,

\( O \) – observed frequency

\( E \) – Expected frequency

\[
E = \frac{\text{Row total \times Column total}}{\text{Grand total}}
\]
\[ \begin{align*}
  c &= \text{Number of columns in a contingency table} \\
  r &= \text{Number of rows in a contingency table.}
\end{align*} \]

In order to study the influencing the attitude of members towards the performance of dairy co-operatives, the researcher has formulated 15 statements and they are evaluated by using Likert’s five point scale. The five point scale consists of strongly agree, agree, no opinion, disagree and strongly disagree. The score of each statement in the five point scale is five, four three, two and one respectively.

If the variables are standardized, the factor model may be represented as:

\[ X_i = A_{i1} F_1 + A_{i2} F_2 + A_{i3} F_3 + \ldots + A_{im} F_m + V_i U_i \quad \ldots \ldots \quad (2.9) \]

Where,

\[ \begin{align*}
  X_i &= \text{ith standardised variable}, \\
  A_{ij} &= \text{Standardised multiple regression coefficient of variable on common factor j} \\
  F &= \text{Common factor}, \\
  V_i &= \text{Standardised regression coefficient of variable i on unique factor i} \\
  U_i &= \text{The unique factor for variable i} \\
  m &= \text{Number of common factors}
\end{align*} \]
The unique factors are uncorrelated with each other and with the common factors. The common factors themselves can be expressed as linear combinations of the observed variables.

\[ F_i = W_{i1} X_1 + W_{i2} X_2 + W_{i3} X_3 + \ldots + W_{ik} X_k \]  

(2.10)

Where,

- \( F_i \) = Estimate of \( i^{th} \) factor
- \( W_i \) = Weight or factor score coefficient
- \( K \) = Number of variables.

It is possible to select weights or factor score coefficients so that the first factor explains the largest portion of the total variance. Then a second set of weights can be selected, so that it is the second factor which accounts for most of the residual variance subject to being uncorrelated with the first factor. This same principle could be applied to selecting additional weights for the additional factors. Thus, the factors can be estimated so that their factors scores, unlike the value of the original variables, are not correlated. Furthermore, the first factor accounts for the highest variance in the data, the second factor the second highest, and so on.

In order to rank the constraints of milk production, Garrett's\(^6\) ranking technique has been adopted. The households were given nine problems and were

asked to rank them according to their views. The order of merit given by the households was converted into ranks by using the following formula.

\[
\text{Percent Position} = \frac{100 (R_{ij} - 0.50)}{N_i} \quad \text{………… (2.11)}
\]

Where

\( R_{ij} = \text{Rank given for } i^{th} \text{ factor by } j^{th} \text{ household.} \)

\( N_i = \text{Number of households ranked by } i^{th} \text{ factor.} \)

### 2.3 OPERATIONAL DEFINITION OF CONCEPTS

**Operation Flood**

With the help of World Food Programme (WFP) the Department of Agriculture of the Government of India formulated a project for stimulating milk marketing and dairy development in India. This is known as Operation Flood Programme and the scheme is implemented by the National Dairy Development Board, Anand, (Gujarat).

**FAT**

**Artificial Insemination (AI)**

It is a method of deposition of semen in the female reproductive tract of animals by artificial means. The frozen semen is preserved in the liquid nitrogen
containers, kept in the societies. The secretary or the tester of the society is trained to carry out the artificial insemination of animals.

**Solid (but) Not Fat (SNF)**

The protein, sugar and ash or salts of milk are terms as “Solid-Not-Fat” (SNF).

**Flush Season**

Milk production is a seasonal one. In the months of April, May, June, July, August and September production of cow milk will be more in the study region. This period is known as flush season.

**Lean Season**

Cow milk production in the month of October, November, December, January, February and March will be low. This period is known as lean season.

**Bonus**

Members supply milk to the society. 50 per cent of the net profit of the society is distributed to the members as patronage bonus. This is paid according to the value of the milk supplied by the members annually.
Cattle Feed

Cattle Feed contains all nutrients, minerals and energy required for cattle. This is fed to the animals to increase the milk production. This union produces cattle feed under the brand name “Aavin”. Besides, more number of private cattle feed producers are functioning in this area.

Green Fodder

New varieties of green fodder like NB-21, BN-2, CO-1 used by the milk producers in this area are referred to as green fodder in this study.