AN ECONOMIC EVALUATION OF DAIRY CO-OPERATIVE SOCIETIES IN SATARA DISTRICT

SANJAY NIVRUTTI JAGTAP
B.Sc.(Agri.)

MAHATMA PHULE KRISHI VIDYAPEETH
RAHURI DIST. AHMEDNAGAR (MAHARASHTRA)
DEPARTMENT OF AGRICULTURAL ECONOMICS
COLLEGE OF AGRICULTURE
PUNE 411 005

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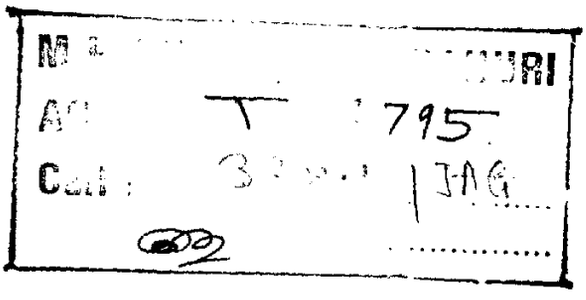

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A Thesis submitted to the

MAHATMA PHULE KRISHI VIDYAPEETH

RAHURI, DIST. AHMEDNAGAR

(MAHARASHTRA STATE)

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF SCIENCE (AGRICULTURE)

IN

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Approved :

(Dr. M.P. DHONGADE)
Research Guide and Chairman

(Dr. N.D. BELHE)
Committee Member

(Dr. S.P. SINGH)
Committee Member

Prof. Y.T. KHARSE
Committee Member

DEPARTMENT OF AGRICULTURAL ECONOMICS,

COLLEGE OF AGRICULTURE,

PUNE - 411 005

1992

DEDICATED TO

MY BELOVED PARENTS, BROTHER AND SISTERS

SANJAY N. JAGTAP

CANDIDATE'S DECLARATION

I hereby declare that the thesis or part thereof has not been submitted by me or any other person for any other Degree or Diploma.

Pune

7th May, 1992.

(S.N. Jagtap)

Dr. M.P. Dhongade
Chairman and Research Guide,
Professor of Agricultural Economics,
College of Agriculture,
Kolhapur - 416 004
(Maharashtra State)

CERTIFICATE

This is to certify that the thesis entitled "An Economic Evaluation of Dairy Co-operative Societies in Satara District", submitted to the Faculty of Agriculture, Mahatma Phule Krishi Vidyapeeth, Rahuri, Dist. Ahmednagar (Maharashtra State), in partial fulfilment of the requirements for the award of the Degree of Master of Science in Agricultural Economics, embodies the results of a piece of bonafide research work carried out by Shri. S.N. Jagtap, under my guidance and supervision and is of sufficiently high standard to warrant its submission to the University for the award of the said degree. No part of the thesis has been submitted for any other Degree or Diploma.

The assistance and help received during the course of investigation and source of literature referred have been duly acknowledged.

Place : Kolhapur

Dated : 7 th May 1992

(Dr. M.P. Dhongade)

Dr. D.S. Ajri
M.Sc.(Agri.), Ph.D.
Associate Dean,
College of Agriculture,
Pune - 416 004
(Maharashtra State)

CERTIFICATE

This is to certify that, the thesis entitled "An economic evaluation of dairy co-operative societies in Satara district", submitted to the Faculty of Agriculture, Mahatma Phule Agricultural University, Rahuri, Dist. Ahmednagar (Maharashtra State), in partial fulfilment of the requirements for the degree of Master of Science (Agriculture) in AGRICULTURAL ECONOMICS, embodies the results of a piece of bonafide research work carried out by Shri. S.N. Jagtap, under the guidance and supervision of Dr. M.P. Dhongade. It is of sufficiently high standard to warrant its submission to the University for the award of the said degree. No part of the thesis has been submitted for any other Degree or Diploma.

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Pune

7 th May, 1992

19 MAY 1992

(Dr. D.S. AJRI)
Associate Dean
College of Agriculture
Poona 5

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Pune :

7th May , 1992

(S.N. Jagtap)

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Fig. No.

ABSTRACT

AN ECONOMIC EVALUATION OF DAIRY CO-OPERATIVE SOCIETIES IN SATARA DISTRICT

by

S.N. JAGTAP
B.Sc.(Agri.)

A candidate for M.Sc. (Agri.) degree

Name of Research Guide : Dr. M.P. Dhongade

Department : Agricultural Economics

The present investigation was undertaken to study the activities undertaken by the dairy co-operatives, operational efficiency and financial position, progress of dairy co-operatives and constraints in the functioning of dairy co-operatives in Satara district. With the objective of carrying out comparative study of the dairy co-operatives from developed and underdeveloped regions, two tehsils from Satara district viz. Karad and Man were purposively selected for this study. In all 20 societies, 10 from each tehsil were selected for the study. From each dairy co-operative, 5 members were selected randomly to evaluate the comparative benefits.

The parameters like milk supplied by each member, fixed capital, working capital, period since establishment show better conditions in the developed region except the price per litre paid to the members. In case of underdeveloped region, parameters

like milk supplied by each member, working capital, price per litre paid show better conditions.

Besides milk collection, two societies from developed region and three societies from underdeveloped region undertook the activity of feed supply. Also two societies from developed region and one society from underdeveloped region undertook the activity of short-term and medium-term loan advances for purchase of feeds and fodder and for purchase of cows/ buffalo, respectively. Average working capital of the dairy societies from developed region was Rs. 61,019 while that from underdeveloped region was Rs. 10,109. It was found that average income of the societies from developed region was Rs. 43,121 while that from underdeveloped region was Rs. 40,812. Commission for milk collection contributed the maximum share in the income of the societies from developed and underdeveloped region and was Rs. 25,627 and Rs. 16,170, respectively. Maximum expenditure, more than 50 per cent was on salaries to staff. Average net profit earned by the societies from developed region was Rs. 16,083 and that from underdeveloped region was Rs. 22,114.

The per rupee returns for societies from developed and underdeveloped region were 1.66:1 and 2.45:1, respectively, while the expenditure to per rupee income was 0.6:1 and 0.41:1, respectively. These two ratios indicated that the societies from developed region were found to be least efficient and the

societies from underdeveloped region, the most efficient. Although income of the societies from developed region was higher than that from underdeveloped region, income-expenditure ratio of dairy societies from underdeveloped region was more than that from developed region because in developed region, expenditure was proportionately more resulting in the reduction of the ratio. Progress of the dairy societies from both developed and underdeveloped regions found to be changed positively over a period of three years.

The multiple linear regression analysis in case of milk supply function showed that the factors viz. milk supplied by each member, fixed capital, working capital and period since establishment were found to be positive and significant in case of dairy societies from developed region while the factor viz. price per litre paid to the member found to be non-significant. In underdeveloped region factors viz.. milk supplied by each member, working capital and price per litre paid were found to be significant while other factors viz., fixed capital and period since establishment were found to be non-significant. At overall level, all the factor except price per liter paid and period since establishment were found to be significant. In case of profit function, the factors viz., total milk supplied, working capital, fixed capital and audit performance found to be highly significant for the societies from underdeveloped region; while they were found to be non-significant in case of developed

region. At overall level, all the factors except audit performance were found to be non-significant.

The dairy co-operative societies have pointed out certain problem viz., inadequate capital, less commission difficulties in transport and communication, subsidy etc., unsatisfactory price to milk, rejection of milk by society, improper milk testing and measurement, milk spoilage through societies and improper milk handling were the important problems reported by the milk suppliers.

(Pages 136)

1. Introduction

1. INTRODUCTION

1.1 General :

"United we stand, Divided we fall".

Co-operation is a philosophy of life which can pervade every aspect of human activity. Co-operation in its simplest sense means working together. In the complex structure of modern society, co-operation has grown enormously like a tree with countless branches. Throughout the ages, co-operation has been practised in some form or the other. The battle for survival which inimical tribes waged against one another, inevitably, promoted the co-operative spirit in community life, for co-operation must always appeal to the weaker section as a protection against the stop.

The co-operative way of life is not new to India. Village co-operatives is the main stay of the co-operative movement in India as they play an important role in the village economy. It is the major weapon for the achievement of economic objectives through a democratic process. Therefore, co-operation was made a living reality and village co-operatives were organised. These are the co-operatives of the people and for the community for their economic development and provide the organisational, financial and technical guidance for the development of rural economy. Dairy co-operatives is one of the types of village co-operatives.

There is a very large unfulfilled demand for milk and milk products in India. The annual milk production during the

period 1956-61 was estimated to be around 19 million tonnes which provided about 140 grams of milk per person per day. Although there has been an increase of about 35.9 million tonnes in milk production during 1990-91 over that of 1956-61, the per capita availability of 178 gms/day has not shown much difference because of rise in population. As against this the minimum nutritional requirement of milk per head per day is 210 grams.[1]

So the organised attempts to develop dairy industry in India was started with the commencement of the Five Year plan era. In the traditional dairying system practised over centuries, fluid milk was generally sold at the source of production and surplus milk after meeting the household demands was converted into ghee for sale in the village or in the neighbouring town markets. According to an estimate made in 1956, about 40 per cent of the total milk produced in the country was used for making ghee and 39 per cent was consumed as fluid milk.[2] This pattern gradually changed and gave place to milk marketing system which included milk producers, middlemen and consumers. Under this system, the producers sold milk at the source of production in the nearby areas and handed over the surplus to the middlemen for sale in the urban markets. Since milk is a perishable commodity, the middlemen exploited the situation and

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1. Chatterjee, A.K. and Acharya, R.M. 1992. "Heading for 21st century." Dairy India, pp. 4-24.

2. Thakur, D.S. 1974. New approach to dairy development

offered comparatively very low prices to the producers in those days. The cattle owners as they were not organised, could not break the vicious circle under which the producers got practically no profit, while the middlemen through their clever manoeuvring reaped the maximum benefit.

Initially, government functionaries started collecting milk from milk pocket areas. When the member farmers realised that they are getting good returns out of dairy business, cattle population increased and ultimately milk production also increased. It became difficult for government functionaries to collect milk from scattered areas. So the primary milk co-operative societies came into existence. They undertook the activity of milk collection at village level. Government set up an infrastructure for transportation of milk from village to collection centre where it was processed. Primary milk co-operative societies got commission for milk collection. The profit obtained out of this activity was distributed to the members in terms of bonus. At present the move is to co-operativise the whole structure of Govt. Milk Schemes.

Exploitation of the producers in its most virulent form continued for many decades till the entry of the co-operative movement in the dairy sector. Establishment of the Kaira District Co-operative Milk Producers' Union in 1946 under the inspiring guidance of late Shri. Vallabhbhai Patel,is rightly considered as a very important landmark in the history of dairy development in India.

1.2 Importance of Co-operation in Dairying

AMUL's success did not pass unnoticed in Delhi and that Anand model of Producers' Co-operatives could be replicated throughout the country to help and develop India's nascent dairy industry.

Under the Anand pattern, it is a two-tier system with the primary society at the village level and the milk producer's union at the district level. The members pool their milk in the societies both in the morning and evening and are paid regularly on the basis of fat content in the milk. In addition, producers also receive annually a share of the net profit earned by the society as bonus in proportion to the transactions each member has had with the society. Using a part of the net returns, the society assists in cattle development, co-operative extension and community development work.

The Union accepts all the milk produced by the farmers. Transport of milk from the societies is arranged by the Union. The societies receive a major share of the net profit earned by the Union as bonus. The Union provides inputs like veterinary services, artificial insemination, balanced cattle feed, fodder development programmes and training to the secretaries of the primary co-operative societies.

Co-operatives are the organisational structures belonging to the farmers themselves. These co-operatives are

democratically organised on the principle of one man, one vote. So every member has a right in its running. Generally, the facilities provided by Dairy Co-operatives to the milk producers are as follows :

i. The milk producers are provided with an assured regular market, prompt payment and a fair price for the milk they produce based on the percentage of fat i.e. quality of milk.

ii. To help the members in obtaining milch animals through the assistance of the financial institutions.

iii. The milk producers also get cattle feed at concessional rates.

Dairying has been a subsidiary occupation for rural people, yet it has brought a considerable improvement in the standard of living of the villagers. According to a survey conducted in Tamil Nadu, there was increase in the income from sale of milk which resulted in change in the living standards of the rural folk, particularly the member of the co-operatives.

In dairy co-operative societies there is greater security and income with more confidence, particularly in the case of weaker sections. The dairy co-operatives also provide employment and livelihood to millions of small and marginal farmers and agricultural labourers. It is in this contest that the co-operative dairy industry in India is recognised as one of the principal instruments of economic and social change.

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1. Jairaj Sewsurah and Jalyshankar, D.C. 1987. "Impact of milk dairy on rural marketing". Seminar held at Institute of Development Studies, University of Mysore.

1.3 The Problem

Satara district is economically developed. There is vast development of both industries and agriculture. There has been a tremendous expansion of dairy co-operatives in the State during recent years. Satara district ranks 4th in case of milk production in the state. The annual milk collection in the district by March 1992 was 1,73,600 liters*. The programmes like 'operation flood' and existence of good markets like Bombay and other cities in the State have helped in this expansion. However, the progress of these dairy co-operatives is not uniform in all areas. Similarly, financial positions are also varying. Many milk co-operatives have made a good progress while some societies are in loss or have become defunct. With inflation, producers are demanding higher prices for milk while consumers want milk at reasonable rate. People also talk about efficiency in collection, processing and distribution of milk. In order to to pin point reality at the micro level, a scientific investigation is necessary.

Thus, the author who hails from one of the progressive districts for development of dairy co-operatives in the State viz., Satara, decided to take up the problem viz., "An Economic Evaluation of Dairy Co-operative Societies in Satara District".

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* Source: 'Daily Sakal' 16th April 1992
Mohal Ashok. 'Dairy business should be kept reserved for co-operatives'.

1.4 Objectives of the study

It was decided to deal with this problem with the following specific objectives :

i. To study the progress of dairy co-operative societies in developed and underdeveloped regions in Satara district.

ii. To study the financial position and operational efficiency of the dairy co-operative societies.

iii. To study the activities undertaken by the dairy societies for their members.

iv. To study the constraints in functioning of dairy co-operatives societies

1.5 Scope and utility of the study

The present study intends to verify imperically whether there are any bottleneckes in the working of the dairy co-operatives. The study aims at gaining an insight into the working of these co-operatives and also to ascertain the factors responsible for the success or failure of the societies.

The present study would be useful to planners, organisers and workers in these co-operatives and villagers who have to work with these co-operatives organisation. The study will reflect the present position of Dairy Co-operatives regarding their success or failure and indicate the directions for improvement.

The study would also be of immense use to take the policy decisions in the co-operative field to remove the defects in the existing working system of the village dairy co-operatives.

2. Review of Literature

2. REVIEW OF LITERATURE

2.1 General :

Review of literature forms an integral part of a research work. It gives insight to the research workers to know whether similar work has been carried out in the past. The methodology used and results obtained serve as a general guideline to the research worker to make further improvement in his research. The literature reviewed for the present investigation is grouped under the following broad groups.

a. Progress of dairy co-operative societies.
b. Financial position and operational efficiency.
c. Activities undertaken by the dairy societies for their members.
d. Constraints in the functioning of the dairy co-operative societies.

2.2 Progress of dairy co-operative societies

Thakur (1975) studied the progress made by dairy co-operative societies by selecting 24 dairy co-operatives in Gujarat in terms of membership, reserve funds, share capital, milk collection and net profit during the period 1969-70 through 1972-73. He noticed that increase in the membership was from 284 to 304 (6%), increase in share capital was from Rs. 5,200 to 7,700 (48%), reserve funds from Rs. 18,000 to Rs. 26,100 (40%) and milk collection from 2,10,000 litres to 2,30,000 litres, value of milk collection from Rs. 2,30,000 to Rs. 2,50,000 (9%) and net profit from Rs. 12,300 to Rs. 16,000 (30%).

He also observed that the number of dairy societies increased from 610 to 783 during this period. It was found that the income earned from milk in the total income of landless labourers was 70 per cent, small farmers 31.10 per cent, medium farmers 27.81 per cent and large farmers 26.87 per cent.

Jain et al. (1978) studied the growth of milk producers co-operatives in Gujarat from 1968-69 to 1973-74 by selecting 109 milk co-operatives. It was found that increase in milk producers' co-operatives was 50.48 per cent during this period. Increase in membership per society was from 157 in 1968-69 to 240 in 1973-74 per society. The share capital per society increased from Rs. 3488 to Rs. 18,842. Average daily milk handled increased from 310 liters to 610 litres and price paid per litre increased from Rs. 0.79 to Rs. 2.06. They also studied the milk handled per vendor per day which increased from 130 litres in 1968-69 to 160 litres and the price paid per litre increased from Rs. 0.80 to Rs. 1.92. It was concluded that price paid per litre by private vendors was lower than that paid by milk co-operatives.

Vijayalakshimi et al. (1980) studied farmers participation in organizing milk marketing through dairy co-operatives. The growth of dairy co-operatives took place emphasizing the fact that the quality of dairy cattle development become the important link. It was suggested that this can be accelerated by increasing the function of dairy co-operatives in supplying green

fodder grown in its area of operation for the benefits of farmers.

Verma (1980) studied the growth rates of dairy co-operative societies and other types of co-operative societies at three different levels viz., milk producers co-operatives, milk unions and other types of co-operatives at a time by taking different dependent variables such as number of milk producers, membership of milk producers' co-operative societies, paid up share capital and values of sales during the year. For milk unions, dependent variables were number of affiliated societies, individual membership of milk unions, paid up share capital and value of sales during the year. For other types of co-operatives, dependent variables were number of co-operative societies, membership of primary societies and paid up share capital. The analysis revealed that there was an average increase of about 1200 Milk Producers' Co-operative Societies every year whereas 'All type of co-operatives' decreased slowly upto 1971-72 and thereafter increased marginally. The annual growth rates were 20 per cent and (-) 0.6 per cent, respectively, milk unions increased at the rate of 5 per cent per annum. Membership of milk producers' co-operatives increased 4 times faster than 'All types of co-operatives'. Affiliated societies under milk unions registered an increase of 39 per cent share capital was the highest for Unions (85%) followed by Milk Producers' Co-operative Societies (43%) and 'All types of co-operative societies' (27%).

The sales done by milk producers' co-operatives increased at the rate of 73 per cent per annum, whereas, for milk unions it increased by 77 per cent.

The study revealed that growth of dairy co-operatives has been much faster than other types of co-operatives as measured by various indicators.

Duhan and Singh (1982) studied the progress of dairy co-operative societies from 1970-71 to 1977-78 in respect of number of societies, their membership, working capital, societies in profit or in loss in Haryana state and found that there was 389 per cent increase in dairy co-operative, 775 per cent increase in members, 435 per cent increase in working capital and societies in profit in 1970-71 and 1971-78 were 45 and 39 per cent, respectively. Societies in loss were 32 and 48 per cent, respectively in this period. Remaining societies were neither in profit nor in loss. They also found that household covered increased from 1 per cent in 1970-71 to 8 per cent in 1977-78. Similarly, villages covered increased from 4 per cent to 22 per cent during this period by the dairy co-operative societies. Total milk procured per annum increased from 2,10,000 kgs. to 18,50,000 kgs. However, milk supply per year per member was the same around 167 kgs.

Jalal (1983) studied problems which members of co-operatives have been facing, particularly in hilly areas, due to

lack of clear policy, lack of co-ordination between different departments of the Government by selecting 4 dairy societies in plains of Uttar Pradesh. He found that the functioning of milk society in hilly region was not favourable for the producer and observed that co-operative milk societies average daily milk collection in hilly region was 82 litres but their average annual business was only 0.49 lakh; whereas milk societies in the plain region has average daily milk collection of only 77 liters and its annual business was Rs. 0.52 lakh. Looking to this difference, it was certain that the cost of milk production and rate of fat content per litre can never be similar in all parts of Uttar Pradesh. From this case study, it was obvious that the policy for Co-operative Dairy Department made for whole U.P. was not suitable for the milk producers of hilly region. It was suggested that the policy should be made according to the specific problem and requirement of place, nature, situation, climate and geographical conditions.

Koli (1985) studied the progress of milk co-operatives in Kolhapur district in respect of total number of milk co-operatives, total number of members, paid up share capital, total milk collection, annual turn-over in 1981-82 to 1983-84 and found that there was 16 per cent increase in the number of milk co-operatives from 1981-82 to 1983-84. However, the membership and share capital remained the same. The milk collection increased by 14 per cent and annual turn-over increased by 76 per cent

during this period. He also showed that societies having annual turn-over upto one lakh, between one lakh and five lakh, between five and ten lakh and above ten lakhs but upto thirty lakhs were 47.3 per cent, 43.40 per cent, 8.2 per cent and 1.5 per cent to the total number of societies, respectively.

Biradar et al. (1990) attempted to evaluate the performance of dairy co-operative societies in Walva taluka of Sangli District. Out of the total co-operative dairy societies, 10% were selected on the basis of following criteria viz., irrigated and non-irrigated area, geographical location of dairy co-operative societies in the taluka, daily average milk collection by the societies and life span of the dairy societies.

It was revealed that the societies in irrigated area showed an increasing trend during the period of review in respect of membership, share capital, reserve funds and deposits, working capital, advances, recovery, profit, audit class, dividend paid, collection and sale of milk per day per society than non-irrigated area. It was found that working of dairy societies in irrigated area was satisfactory as compared to the non-irrigated area. Nevertheless, the overall working of all these selected societies was not very satisfactory. Dairy business in irrigated area was more beneficial than that in the non-irrigated area due to developed infrastructure. About 14 dairy co-operative societies in the taluka were closed due to inadequate milk supply. By the end of 1985-86, out of 89 dairy societies, 20

societies (22.48%) were collecting milk less than 100 litres per day, 15 societies (17%) were collecting milk in the range of 101-200 litres per day while 18 societies (20.22%) were collecting milk in the range of 201-300 litres per day. This shows that majority of the societies were financially weak. As many as 75 societies working in 34 villages and village possessed more than one dairy society which increased the competition amongst the societies. Out of 80 villages, 34 villages (42.5%) had more than one society. Even then, the Government continued to register new dairy societies.

Secretaries of about 75% societies were untrained which adversely affected the efficiency of the societies. Number of persons who were members of co-operative dairy societies were not the milk producers. As per the Co-operative Societies Act of 1960, the societies were not to admit the persons as members who were not the producers of milk. In Walva taluka, the number of dairy societies increased from 48 in the year 1975-76 to 121 in the year 1985-86. However, the milk collection did not increased much. This showed that there was only quantitative increase in the number of dairy co-operatives in Walva taluka. Lack of co-operative spirit was the major difficulty in the progress of dairy co-operatives.

Kandasami et al. (1991) conducted the study in Gobichettipalayam block in Periyar District of Kerala state. This block was purposively selected because it comprised of large,

medium, small and marginal farmers and agricultural labourers. In this block, a sample of 17 societies was chosen on random basis which formed 50 per cent of the total members of societies in the block. Further, a sample of 10 members from each selected society was chosen by drawing lots. On the whole, 170 producer members were selected for the study. The data revealed that more than 50 per cent of the sample societies were having medium performance index and about 30 per cent of the societies had ranked high and very high performance. It was concluded that in the study area, most of the dairy societies performed well.

Of the 9 independent variables viz., cropping intensity, area under irrigation, opinion about the staff, satisfaction of members, identification of members, leadership, percentage of highbred animals to total animals, percentage of literacy of members, five variables were found to be correlated with dependent variable "Performonce Index". The regression model incorporating all the nine variables for explaining the level of performance of Milk Producers' Co-operative Societies showed high explanatory power as the value of R^2 was 0.7286. This indicated that the contribution of the above nine variables in the performance index was 72.86 per cent.

Out of six factors, viz., cropping intensity, percentage of area under irrigation, opinion about the staff, satisfaction of members, identification of members, leadership

on assets (4.93%) of the total capital investments. Milk cans with caps and furniture formed major share of the total capital investment of Rs. 9,194.

Singh et al. (1985) studied the operational efficiency of U.P. milk co-operatives by selecting 50 milk co-operatives. A zero-order correlation analysis was used for observing the cause and effect relationship between efficiency structure as dependent variable and other six factors as independent variables. He found that the results were highly significant.

i. The r' value of milk co-operative co-ordination = 0.96 indicated significant relationship with the operational efficiency of a co-operative with higher co-ordination system. Society co-ordination was therefore a significant factor causing effect on the working of milk co-operatives.

ii. The input services resulting value of r' = 0.95 was significantly correlated. The greater the input services supplied to members of a milk co-operative, greater the efficiency of that village milk co-operative.

iii. The communication system in the dairy co-operative has also direct effect on the working of co-operative system. The resulting r' value of 0.93 indicated the significant relationship between communication activities and efficiency of milk co-operatives.

iv. The correlation between attitude of milk producers and the efficiency of milk co-operatives was in positive direction. The

resulting value of 'r' = 0.97 was highly significant. It is revealed that positive inclination in milk producers brings efficiency in milk co-operatives.

V. In each milk co-operative, the members and office bearers play certain roles. These roles have significant bearing in the co-operatives. It is evident by the resulting 'r' value = 0.95 which is highly significant it indicates that greater the amount of positive and constructive roles, higher is the efficiency in milk co-operatives.

vi. For running each co-operative efficiently, officials play a greater role in planning and implementation of a programme. In this study, the resulting value 'r' = 0.95 is very significant. The officials may be well trained out. If this training is not properly utilized, the milk co-operative may not run efficiently. It is therefore, essential that the officials, particularly of the lower levels should make proper use in running of milk co-operatives.

2.4 Activities undertaken by the dairy societies for their member/milk producers

Rai et al. (1982) conducted study regarding the performance of the Kaira District Co-operative Milk Producer's Union and its affiliated village level milk societies. It estimated the impact of co-operative societies in improving the economic conditions of small and marginal farmers, assessed the level of milk production and studied feeding practices. Apart

from providing larger quantity of milk, the co-operatives aimed at improving the economic conditions of the producers, especially those belonging to the weaker sections in the rural areas. The Kaira union and in affiliated village milk societies had provided a source of periodic cash income to milk producers. They have also spent a considerable amount on development activities and medical care.

Baviskar (1986) found that dairy co-operatives had brought many benefits to milk producers. They provided a guaranteed market for milk at a fixed price, supply cattle feed at a reasonable cost and provided efficient veterinary and extension services for the village. The small farmers were also found to get benefit from the dairy co-operatives.

Biradar (1987) conducted a study viz., 'Profile of dairy beneficiaries and non-beneficiaries in rural Maharashtra'. The main findings of the study focused on social characteristics and economic features. With regards to social characteristics, it was found that earning members in the beneficiaries group were more than the non-beneficiaries. It was revealed from the study that majority of the households were engaged in agricultural operation as their main occupation.

Economic features like the average milk consumption of beneficiaries was 490 ml. per day per family which was less than non-beneficiaries milk consumption of 516.6 ml. per day per

family.It means that the per capita milk consumption of non-beneficiaries was more (90.49 ml.) than that of beneficiaries (81.26 ml). The average number of animals in case of beneficiaries was found to be 5.83 while with non-beneficiaries they were found to be 4.34. The average number of milking animals in case of beneficiaries was more (1.16) as compared to those of non-beneficiaries (0.99). From this study it can be concluded that the overall economic plight of beneficiaries was more excellent than the non-beneficiaries.

It is seen from the above studies that the organisational pattern, coverage and services rendered by milk co-operatives were different for different states. Not only this but even within the states there was wide variation with regard to above parameters. As regards the working efficiency and gains from milk co-operatives the researchers have not come to the single conclusion i.e. unanimous conclusion. In few societies all the members were equally benefited while in others only the management committee members or large milk producers reaped the benefits.

Inamke et al. (1989) conducted a study on the benefits accrued to the members of dairy co-operative societies. Two tehsils, Malshiras and Madha were selected randomly from Solapur district of Maharashtra. All societies from these tehsils were grouped into three categories according to the total milk

collection in the year such as small (below 50,000 litres), medium (50,000 to 1,00,000 litres) and large (above 1,00,000 liters). Three co-operative societies from each size group and from each of Malsiras and Madha tehsils were randomly selected. In all, 18 societies were selected. From each dairy co-operative eight members were selected. In all, 144 members were selected and studied. They studied the services rendered by the milk co-operative societies and concluded that the per month milk collected and sold by the medium sized societies was two times more than small size societies while the large size societies had four times turn-over than medium size societies. There was only one society from large group which collected the buffalo milk separately.

The large size societies had supplied maximum quantity of cattle feed to their members. The small size societies had also supplied more cattle feed in proportion to the business of these societies. However, the medium size societies had not undertaken the dealings in cattle feed on large scale. It was observed that, 81 per cent of the total cattle feed was supplied on credit by small sized societies while large sized societies had supplied 91 per cent of total cattle feed. Medium sized societies on the other hand supplied 100 per cent of cattle feed on credit. This was because members of these societies were not interested to invest the cash on cattle feed as they got it on credit.

It was observed that in the small sized societies, 7 members received loan to the extant of Rs. 42,000. The loan was mainly offered for the purchase of cross-bred cows. In the medium sized societies, no one availed this facility but in the large societies, 177 members received loan amounting to Rs. 8,94,000 for purchase of cross-bred cows and 29 members got the loan worth Rs. 75,000 for purchase of buffaloes.

The members in the large group societies also availed veterinary facilities through the milk union. These societies arranged for medical checking of 328 animals and inseminated 210 animals.

2.5 Constraints in the functioning of dairy co-operative societies

Mohanan (1976) found that the leaders in general expressed apprehension regarding the organisational and operational inefficiency of co-operatives. But they took a cautious view in respect of their role performance in this regard. The need for viable societies was emphasised. Interference of officials and political domination by vested interests were the two prominent features which worked at cross purpose resulting in feeble performance of co-operatives. Education of the leaders did not help much to improve the performance of the primaries. Instead, integrity and business outlook appeared to have crucial role to play for successful

accomplishment. Leaders detached from political passions were found to be ensuring the success of co-operative ventures. The study brought into a sharp focus the utter disregard in nurturing leadership traits among younger generation. The author suggests that this gap needs to be bridged so as to make co-operatives as an instrument of social change.

The people of Kaira district have experienced far reaching changes as a result of the exposure to the co-operative economic enterprises, organisation and technology provided by the well known co-operative- AMUL Dairy. The paper by Somjee and Somjee (1978) identified some of the changes. The social change was preceded by a structural change. The establishment of the institution of the milk co-operatives in various rural communities acted as a catalystic agent, despite a number of constraints bringing about a number of changes in the social and economic life of the district.

Koli (1985) studied the progress of milk co-operative in Kolhapur district in respect of distribution of societies according to audit class. Out of 940 societies, those falling under 'A' class were 7.25 per cent, 'B' class were 57.07 per cent, 'C' class were 28.07 per cent, 'D' class societies were 5.26 per cent and unclassified were 2.33 per cent. The societies falling under 'A' and 'B' classes were supposed to be functioning well but societies with 'C' and 'D' classes were not working

satisfactorily. He also identified some problems and weakness of co-operative dairy societies such as weak organisational structure of co-operatives, lack of uniformity in collection and marketing of milk, insufficient technical input services, inadequate transport facilities, lack of cattle feed and dependence on private traders and competition from private vendors in the marketing of milk.

Baviskar (1986) conducted research on dairy development in tribal area of Gujarat and reported that there was an increase in the number of Co-operative Milk Producers' Societies. It focused upon milk co-operatives managed by Jesuit Missionaries in the region presenting a detailed description of their internal organisation. The main reasons for the success of the Jesuit run co-operatives were the loyality of its members and integrity of its leaders. The secretary of a dairy co-operative was found to be a key functionary in the success of the project.

Vithal (1986) conducted a study on the factors affecting success of milk co-operatives in Anantpur district of A.P. He found the important factors as below.

a. Presence of factions in the village
b. Presence of caste dominance
c. Unhealthy practice of 'Proxy'
d. Acute water and fodder problem
e. Lack of proper transport facilities
f. Menace of vendors

g. Lack of trained personnel

h. Lack of adequate infrastructure.

Biradar (1990) found that in Maharashtra, the milk co-operative societies had made the quantitative development in respect of increasing the number of milk co-operative societies, share capital, membership, working capital, reserve fund, collection of milk and distribution of milk etc. While in effectiveness they were lagging behind as compared to other societies and other states like Gujarat, Punjab and Tamil Nadu. Alongwith the structural defects in the working of milk co-operative societies, many studies and observations have conceived that the best way to remove these defects and weakness was to allow the co-operatives to recognize themselves on Anand pattern and to permit the producers to have the dominant role in the collection, processing and marketing of milk and milk products.

Sidhu et al. (1990) in their study in Sangrur district of Punjab concluded that the successful societies were charaterised by the honest and dedicated management resulting in the loyalty of their members. Consequently, the successful societies were able to break the barriers of unfavourable socio-economic system. The unsuccessful Milk Producers' Co-operative Societies failed due to lack of spontaneity and dominance of big farmers who were divided into two strong opposing groups which resulted in conflict on the point of location and leadership of the society. The members stopped selling milk to the society and society failed to generate sufficient income to cover its costs.

3. Methodology

3. METHODOLOGY

In any scientific enquiry, it is a must for an investigator to get well acquainted with the methods of conducting research. He should also follow appropriate steps involved in carrying out research to get desired results. The present chapter describes the selection of area and village dairy co-operative societies, ultimate beneficiaries/milk producers, collection of data and method of analysis of data.

3.1 Selection of area

Satara district was purposively selected for the present study. Familiarity of the author with this tract was one of the reasons for selection of this particular district. The sampling method used in the present investigation was three stage random sampling with Tehsil as a primary unit, village dairy co-operative society as the secondary unit and the beneficiaries as the ultimate sampling unit. Comparative study of the primary milk co-operative societies from developed region and underdeveloped region was carried out. For this propose Man tehsil which is a well-known drought prone tehsil was selected as underdeveloped tehsil and Karad tehsil being mostly irrigated, as developed tehsil. Out of eleven tehsils in Satara District, Man and Karad tehsils were selected.

3.2 Selection of dairy co-operative societies

There were 168 and 66 dairy co-operative societies in Karad and Man tehsils, respectively. There was a big difference in the total number of dairy co-operative societies in the two

tehsils. It was found that Man tehsil possessed larger number of primary dairy co-operative societies amongst the underdeveloped tehsils. For selection of village dairy co-operative, a list of the co-operatives in the tehsil alongwith their total milk collection for 1989-90 was obtained from the Milk Union: Satara and ten dairy co-operative societies each from these two tehsils were selected randomly. The dairy co-operative societies thus selected for the present study were:

Region	Tehsil	Name and village of the society
A) Developed	Karad	i) Atakeshwar Sahakari Dudh Vyavasaik Sanstha Ltd., Atake
		ii) Atake Sahakari Dudh Vyavasaik Sanstha Ltd., Atake
		iii) Krishna Sahakari Dudh Vyavasaik Sanstha Ltd., Khodshi
		iv) Ond Sahakari Dudh Utpadak Sanstha Ltd., Ond
		v) Shri Mahadeo Dudh Utpadak Sahakari Sanstha Ltd., Talgaon
		vi) Taswade Sahakari Dudh Purawatha Sanstha Ltd., Tasawade
		vii) Shri Jotirling Sahakari Dudh Vyavasaik Sanstha Ltd., Umbraj
		viii) Wahagaon Sahakari Dairy Society Ltd., Wahagaon
		ix) Shri Hanuman Sahakari Dudh Vyavasaik Sanstha Ltd., Wathar
		x) Shri Gajanan Dudh Utpadak Sahakari Sanstha Ltd., Vanwasmachi

Region	Tehsil	Name and village of the society
Under-developed	Man	i) Manganga Sahakari Dudh Vyavasaik Sanstha Ltd., Andhali
		ii) Shriram Sahakari Dudh Vyavasaik Sanstha Ltd., Bidal
		iii) Appa Maharaj Sahakari Dudh Utpadak Society Ltd., Gondawale.
		iv) Jaggannath Sahakari Dudh Vyavasaik Sanstha Ltd., Lodhawade
		v) Shri Baneshwar Sahakari Dudh Vyavasaik Sanstha Ltd., Mahimangarh
		vi) Shri Siddhanath Sahakari Dudh Vyavasaik Sanstha Ltd., Malawadi
		vii) Mahalaxmi Sahakari Dudh Vyavasaik Sanstha Ltd., Mohi
		viii) Ganesh Sahakari Dudh Vyavasaik Sanstha Ltd., Narawane
		ix) Jai Bhawani Sahakari Dudh Vyavasaik Sanstha Ltd., Pingali
		x) Shri Hanuman Sahakari Dudh Vyavasaik Sanstha Ltd., Tondale

3.3 Selection of beneficiaries i.e. milk producers

A list of beneficiaries of the dairy societies was obtained from the secretaries of the respective dairy co-operative at the time of survey. From each dairy co-operative society, 5 members were selected randomly and totally 50 members each, from developed and underdeveloped region were selected. Total number of animals possessed, milk yield and milk supplied by each of the beneficiaries, land holding, size of family etc. and the comparative benefits obtained by the beneficiaries of each society were obtained. In all,100 beneficiaries were studied.

3.4 Collection of data

The data for the years 1986-87 through 1988-89 were collected by the survey method by contacting secretaries/chairmen of the selected societies in person. The detail questionnaire was prepared for this purpose. The relevant information was also obtained from the records of the dairy societies. The detailed information on the following points was collected for the period from 1986-87 to 1988-89.

a) Information about the year of establishment, audit class, membership and activities undertaken by the society.

b) Information about share capital, deposits,borrowings, funds, working capital, inventory of fixed assets, excess and loss of milk in handling, credit advances, milk collection, turnover etc.

c) Income and expenditure of the society.

d) Net profit or loss, profit distribution

e) Information about Management Committee and Management Committee meetings

f) General difficulties of the society in respect of capital, transport and communication, secretary, response from members, area of operation, policies, credit supply etc.

g) Average price paid to milk producers, commission given by government for milk collection.

h) Problems faced by the society regarding quality of milk supplied by milk producers,collection of milk by Government milk schemes.

i) General impact of the society on milk producers

j) Progress of the society since last three years.

A separate questionnaire was prepared for obtaining the information from the milk producers or beneficiaries. The selected beneficiaries from the respective societies were personally interviewed and information on the following points was collected.

a) Information of the beneficiaries regarding age, education, type of farmer, occupation.

b) Livestock position, land holding, cropping pattern.

c) Average milk yield and milk supplied to the society, milk kept for domestic use and for feeding young ones.

d) Expenditure incurred on milk production,quantity of F.Y.M. produced per year, investment in the dairy enterprise.

e) Benefits obtained from dairy co-operative society

f) Reactions towards the dairy co-operative society.

3.5 Period of investigation

The data were collected in January and February, 1991 and data pertained to the complete year 1989-90. Detailed information about area of operation, number of members, period of establishment, activities undertaken and financial resources, business turn-over, profit/loss, management etc. was collected.

3.6 Analysis of data

Data collected from the sample dairy societies were

scrutinised, compiled, processed and analysed as per the objectives of the study. Data were analysed by tabular method and arithmetic calculations such as means, percentages and ratios were calculated for drawing inferences. The results of analysis are presented separately for the developed region and underdeveloped region as well as for the two tehsils put together (overall). For studying the working efficiency of dairy societies from these groups, the following economic tests are applied.

They are :

i) Income-expenditure ratio

ii) Expenditure - income ratio

iii) Rate of return on capital (%).

Higher or lower income alone does not reveal the net effect of business unless expenditure side is studied. If higher income is also associated with proportionately higher expenditure, net profit is reduced. Therefore, income-expenditure ratio is a better measures of efficiency. This ratio indicates income per rupee of expenditure. If income is higher than expenditure, there is net profit and the ratio is greater than unity. If the income is less than the expenditure, there is net loss and the ratio is less than unity. Higher ratio indicates higher economic efficiency because the income is proportionately higher than the expenditure. Opposite to this is expenditure-

income ratio. This ratio indicates expenditure incurred to get one rupee income. Smaller the ratio, higher is the economic efficiency because in such cases smaller amount is spent to get income. Gross and net return to capital indicates income earned by the capital invested in the business. Net return to capital is comparable to the prevailing rate of interest on borrowing. If the rate of return is higher than the rate of interest, investment in the business is worthless.

Functional analysis :

In addition to economic tests, physical and financial production function analysis was also carried out to study factors which are responsible for overall working of these societies and for earning profit which is generally considered as a measure of success.

The milk supply function and the profit functions for the selected dairy societies in the developed region, underdeveloped region as well as for the overall level were estimated with the help of linear multiple regression equations. Before estimating the functions, the data relating to the independent variables were tested for multicollinearity by computing zero-order correlation matrix. The linear multiple regression equations of the following type were fitted to the data.

I. Milk supply functions for developed region, underdeveloped region and for overall level.

$$Y = a + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + b_5 x_5 + u$$

where,

Y = Total milk collected by each society (litres)

X_1 = Quantity of milk supplied by each member (litres)

X_2 = Fixed capital of the society (Rs.)

X_3 = Working capital of the society (Rs.)

X_4 = Price/litre paid by the society (Rs.)

X_5 = Period since establishment (years)

b_i = Regression coefficient (where b_i = 1.....5)

a = Constant/intercept term

u = Random term/error term.

II. Profit function for developed region, underdeveloped region and for overall level.

$$Y = a + b_1 x_1 + b_2 x_2 + b_3 x_3 + b_4 x_4 + u$$

where,

Y = Net profit earned by the society (Rs.)

X_1 = Total milk supplied (litres)

X_2 = Working capital of the society (Rs.)

X_3 = Fixed capital of the society (Rs.)

X_4 = Working performance of the society judged by audit class awarded to the society (points).

b_i = Regression coefficient (where b_i = 1.....4)

a = Constant/intercept term

u = Random term/error term.

4. Socio-economic features of the study area

4. SOCIO-ECONOMIC FEATURES OF THE STUDY AREA

4.1 General

As mentioned earlier, Satara district of Maharashtra state was purposively selected for conducting the present study. The district comprises of 11 tehsils. Out of these, 2 tehsils viz., Karad and Man from developed region and underdeveloped region, respectively, were selected for the study. The purpose of this chapter is to give the reader, some information about the tract under study which can serve as a background.

Few socio-economic features of the study area, particularly for Satara district are discussed below in brief.

4.2 Location

Satara district lies on the western side of Deccan Plateau. To its north lies Pune district. On the eastern side is Solapur district, while the southern side is bounded by Sangli district. Ratnagiri lies on its west and Raigad district on the north-east. A major portion of the district comes under Krishna river basin and a part lies in Bhima valley area. The district lies between 17.30' and 18.11' north latitude and 73.33' and 74.54' east longitude. Total geographical area of the district is 10,484 sq.km. which accounts for 3.4 per cent of the total geographical area of Maharashtra state.

4.3 Topography of Satara District

Sahyadrian mountain ranges, hills and valleys uplands and slopes and plain surface forms topographical situation of

Satara district. There are two important mountain ranges. The Sahyadri range measures 93 km. in length extending from North to South which comprises of the western boundary of the district. This range is known as Bamnoli range. The other range is the Mahadeo range. It starts 16 km. away from Northern side of Mahabaleshwar and extends to Eastern and South-Eastern parts of the district.

Except hills in Mahabaleshwar and Koyana valley areas, hills in other parts of the district are generally small, rocky and the natural vegetation is negligible. Mahabaleshwar is the highest place in the district and is situated at an average height of 1436 meters from the mean sea level.

Satara district can be divided into three natural zones from the point of view of topography viz., the western zone comprising of hilly areas, the central zone comprising of Krishna valley basin area and the Eastern plain surface area.

4.4 Soils

There are different types of soils in different zones of the district. Soils of the Western part of the district viz., Mahabaleshwar, Patan, Wai and Jawali tehsils are reddish in colour and are formed from 'Laterite' type of rocks. The thickness of soil stratum on hilly slopes is less and this type of soils are used for growing grasses.

Wai, Jawali and Patan tehsils come under the river

valley areas of Krishna, Venna, Kudali, Kole and Koyana. The soils in this track are alluvial type and are highly fertile. The soils in the central part of the district are medium to thick layered alluvial and black soils. The soils of Deccan Plateau of the Krishna valley are considered to be very fertile. The soils of Satara and Karad tehsils along the banks of Krishna river are highly fertile.

The soils of Khandala and Phaltan tehsils are light type, rocky and less fertile. However, the land along banks of Nira river and its tributaries are of good quality. The soils on Eastern part of Krishna valley are rocky in appearance; while the thickness of soils of the Eastern part of Khatav tehsil are of medium type. Land from Man tehsil are of inferior type and crops like bajra and grasses are grown on these lands.

4.5 Climate and rainfall

Rainy season varies from middle of June to end of September. From October to mid of November, climate is more or less hot. Winter season extends from mid of November to January end and air is cool. Severity of cold decreases from February to end of March. Summer season extends from April to mid of June. In general, the climate is moderate.

According to geographical situation, changes in the climate are observed. Even during summer, the climate in the western zone is cool and pleasant. However during rainy season there is a severe cold in this zone. Climate is quite hot in the

central tract of the district during summer. Climate in the eastern part is comparatively hotter than the climate in the central part of the district.

There is also much variation in the rainfall in the district. The average annual rainfall in arid region like Man tehsil is 462 mm. while it is the highest in Mahabaleshwar tehsil (6182 mm). The annual average rainfall in Western Ghat region of Sahyadri range varies from 1200-2000 mm. on the east to 5000 mm. at the extreme western end. The average rainfall in the eastern part of the district like Man, Khatav and Phaltan tehsil is 600 mm. The highest and the lowest temperatures recorded at Satara in 1989 were 34.7 C and 12.0 C respectively, while the highest and the lowest temperature recorded at Mahabaleshwar were 32 C and 3.1 C, respectively.

4.6 Land utilisation

The details about land utilization are given in Table 4.1.

Table 4.1 Land utilization in Satara District

Sr.No.	Land use category	Area in 00' hectares	Per cent
1.	Total geographical area reported by C.S.O	10,583	100.00
2.	Forest area	1,356	12.81
3.	Land put to non-agricultural uses	233	2.20
4.	Barren land and land unsuitable for cultivation	1,171	11.06
5.	Culturable waste	385	3.64
6.	Permanent pastures and other grazing lands	769	7.27
7.	Land under miscellaneous tree crops and groves	56	0.53
8.	Fallow land a) Current fallows	181	1.71
	b) Other fallows	369	3.49
9.	Net sown area	5782	54.63
10.	Area sown more than once	776	7.33
11.	Gross cropped area	6559	61.97

Satara district has total geographical area of about 10,58,300 hectares. The area under forests was only 12.81 per cent of the total geographical area. The gross cropped area accounted for 61.97 per cent of the total geographical area. The proportion of net sown area to the total geographical area was 54.63 per cent. The area sown more than once was only 7.33 per cent of the total geographical area and 13.42 per cent of the net sown area. Proportion of barren land and land unsuitable for cultivation was 11.06 per cent, while the culturable waste land was 3.64 per cent of the total. The percentage of net irrigated area to gross cropped area was 18.2 per cent.

4.7 Cropping pattern

Bajra and jowar are the principal kharif crops while jowar, wheat and gram are the principal rabi crops of the district. Sugarcane constitutes the principal cash crop. Groundnut is major oilseed crop grown in the district. The detailed information regarding the cropping pattern is given in the Table 4.2.

Table 4.2 shows that in Satara district, the area under jowar and bajra was 36.41 per cent and 16.63 per cent of the total cropped areas. The area under sugarcane, the important cash crop, was 4.8 per cent of the total. In oilseed crops, groundnut crop above covered 8.7 per cent of the total cropped area. Vegetables and fruit crops were grown on 3.4 per cent of the total area.

Table 4.2 Area under different crops in the district and selected tehsils (1987-88)

Sr. No.	Name of crop	Area in '00' hectares		
		Karad Tehsil	Man Tehsil	Satara District
1.	Jowar	267.97 (32.97)	198.00 (25.05)	2388.34 (36.41)
2.	Paddy	94.04 (11.57)	0.93 (0.12)	316.47 (4.82)
3.	Bajra	2.03 (0.25)	447.84 (57.07)	1091.31 (16.63)
4.	Wheat	11.03 (1.36)	6.78 (0.87)	138.47 (2.11)
5.	Other cereals	4.82 (1.52)	1.23 (0.59)	99.23 (0.16)
6.	Gram	7.32 (0.90)	1.79 (0.23)	96.21 (1.46)
7.	Tur	5.32 (0.65)	18.43 (2.37)	71.41 (1.09)
8.	Matki	2.61 (0.32)	72.62 (9.36)	172.49 (2.63)
9.	Other pulses	13.51 (1.66)	0.93 (0.12)	302.94 (4.62)
10.	Total Oil seed crops	137.30 (2.96)	2.93 (10.17)	313.40 (20.58)
11.	Sugarcane	137.30 (16.09)	2.96 (0.38)	313.40 (4.78)
12.	Condiments and spices	0.93 (0.73)	1.97 (0.25)	49.49 (0.75)
13.	Fruits and vegetables	5.04 (0.62)	19.03 (2.45)	224.03 (3.41)
14.	Total fibre crops	2.85 (0.35)	0.08 (0.01)	7.31 (0.11)
15.	Fodder crops	124.15 (15.28)	--	667.12 (10.17)
16.	Total non-food crops	294.73 (36.27)	3.63 (0.47)	1287.04 (19.62)
	Total gross cropped area	812.55 (100.00)	776.14 (100.00)	6559.67 (100.00)

The jowar crop was predominant in Karad tehsil (32.97%) while bajra was predominant in Man tehsil (57.07%). Relatively more proportion of area under pulse crops and fruits and

vegetables was in Man tehsil, while Karad tehsil had relatively more proportion of area under sugarcane, oilseeds, fodder and non-food crops.

In order to raise the per hectare production of different crops, Agriculture Department had undertaken the programme of distribution of seeds of high yielding and hybrid varieties of crops. Out of the total area under jowar, hybrid varieties were grown on 80.9 per cent of the area, while hybrid bajra covered 37.5 per cent of the total area under the crops.

4.8 Population

As per 1981 census, the total population of Satara district was 20,38,677 while the expected population by the year 1989 was 24,32,000. The growth rate recorded during the period of 9 years was 19.27 per cent. Density of population was 195 per sq.km. Satara district held 3.4 per cent of total geographical area of the state and 3.3 per cent of the state population. Of the total population, 13 per cent belonged to urban area and 87 per cent to rural area. The economic classification of population showed that 33.55 per cent were workers. Amongst workers, 71.3 per cent were cultivators and agricultural labourers while the rest were working in other sectors.

4.9 Livestock population

Livestock forms an important item of capital investments on the farm. A farmer usually keeps a pair of bullocks, few cows and in addition, few goats and poultry birds.

Bullocks provide a main source of power required to carry out different farm operations. Table 4.3 gives an idea about the livestock position in Satara District.

Table 4.3 Livestock population in Satara District (1987)

Sr.No.	Category of Livestock	Number
1.	Cattle	
i)	Males over 3 years	1,59,837
ii)	Females over 3 years	1,76,394
iii)	Young stock	1,21,866
	Total	4,58,097
2	Buffaloes	
i)	Males over 3 years	5,326
ii)	Females over 3 years	1,93,564
iii)	Young stock	95,109
	Total	2,93,999
3.	Sheep and goat	6,86,083
4.	Horses and ponies	1,291
5.	Other livestock	9,659
6.	Total livestock	14,49,129
7.	Poultry including other poultry birds	17,84,957

Reference - Livestock census 1987.

It could be revealed from the table that the total cattle population in the district was 4,58,097. Out of them, 94,722 were the females (cows) over three years of age. Cattle population in Karad was 23,969 while in Man it was 20,052. Total buffalo population in the district was 2,93,999 out of which

1,12,789 were females over three years of age. Buffalo population in Karad tehsil was 44,918 while that in Man tehsil i.e.1,85,435.

4.10 Animal husbandry and veterinary services

Animal husbandry and dairy business has become the most important subsidiary enterprise for the farmers in the tract. In order to increase milk production, impetus was needed to be given for rearing of crossbred cattle in these tehsils. It was visualised that cow should be made a principal milch animal and with that view cross breeding programme was undertaken by the State Department of Animal Husbandry. By 1989-90, there was 1 veterinary hospital,36 dispensaries,51 veterinary aid centers and 1 mobile animal clinic squad operating in the district. There were 122 artificial insemination (A.I.) centers in the district.

4.11 Transport and communication

National Highway No.4 viz., Bombay-Bangalore passes through the Satara city, dividing the district into two parts and it serves as an important means of communication. Its approximate length in the district is 165 km. The total length of the rail track in the district is 124 km.and there are 24 railway stations in the district. The road length is 8703 km. The road length per 100 sq.km. works out to 40.53 km.

4.12 Co-operative institutes

In 1989, there were 331 banks in the district out of which 183 were in the co-operative sector and the remaining 148

were the scheduled banks. During the co-operative year ending on 30th June 1980, there were in all 3805 co-operative institutes in the district with a membership of 9.90 lakhs. Out of total co-operative institutes 1808 (47.52 %) were production institutes, 804 (21.23 %) agricultural credit institutes and the remaining (31.35 %) institutes of other types. There were 765 social service societies,416 non-agricultural credit societies and 12 marketing societies. Out of 9.9 lakh members, 69.60 per cent members belonged to credit societies and the remaining 30.40 per cent members belonged to non-credit societies. Out of the total membership of non-credit societies, 14.29 per cent belonged to the dairy co-operative societies alone. Thus, the dairy co-operative societies were the prominent organisations in the co-operative sector in the district.

4.13 Government milk schemes

There were two Government milk schemes in Satara district, one located at Satara and the other at Mahabaleshwar. During 1989-90, 3.79 crore litres of milk was collected by both these schemes value of which worked out to Rs. 16.01 crores. Average per day procurement of milk in Satara district worked out to 1,84,022 litres.

Source : Socio-Economic Review and District Statistical Abstract of Satara District (1990).

5. Results & Discussion

5. RESULTS AND DISCUSSION

Results obtained in the present investigation are described in this chapter.

5.1 Organisation of the dairy societies

Success of a society largely depends on its sound organisational structure. In the present study, it was observed that all the societies from developed and underdeveloped regions i.e. Karad and Man tehsils, were based on democracy and had democratic management. The supreme authority was its General Body of members. They were taking decisions subject to the provision of the Act, Rules and Bye-laws, for governing the affairs of the society. The managing committee consisted of members elected by the general body to carry on day-to-day administration of the society and its work under the direction of the General Body. The management was honorary and only secretary was the paid servant. For studying the organisation of the societies, the information about the year of establishment, area of operation i.e. the villages served, audit class etc. was collected. The same is discussed below in brief.

5.1.1 Year of establishment

The year of establishment or the age of society is likely to be one of the factors contributing to the success of the organisation. The management experience may help in making improvements from time to time.

The distribution of the societies according to year of establishment and average age is given in Table 5.1.

Table 5.1 Distribution of the dairy societies according to year of establishment and average age

(Number)

Year of Establi-shment	Age group years	Karad Tehsil (Developed region)	Man Tehsil (Underdeveloped region)	Overall
1961-65	24-28	2 (20.00)	-	2 (10.00)
1966-70	19-23	2 (20.00)	-	2 (10.00)
1971-75	14-18	-	-	-
1976-80	9-13	4 (40.00)	6 (60.00)	10 (50.00)
1981-85	4- 8	2 (20.00)	4 (40.00)	6 (30.00)
1986 onwards	1-3	-	-	-
Total		10.00 (100.00)	10.00 (100.00)	10.00 (100.00)
*Average age (Years)		15	9	12

(Figures in the parentheses are percentages to total)

It can be seen from the Table 5.1 that in the developed region i.e. Karad tehsil, the average age of the selected societies worked out 15 years. Twenty per cent societies were established between 1961 and 1965, 20 per cent societies between 1966 and 1970, 40 per cent societies between 1976 and 1980 and 20 per cent of the societies were established between 1981 and 1985. Not a single society in the developed region was established between 1971 and 1975. In the underdeveloped region i.e. Man

tehsil, all the selected societies were established after 1976 and the average age worked out to be 9 years. Among the selected societies, as many as 60 per cent were started between 1976 and 1980 and 40 per cent societies were started between 1981 and 1985. This shows that the underdeveloped region was late in starting the co-operative dairy societies. At the overall level, 50 per cent societies were in the age group of nine to thirteen years i.e. the maximum number of societies were established during the period from 1976 to 1980. The overall average age of the societies worked out to be 12 years. The lowest age was 4 years while the highest age was 28 years (Wahagaon Dairy Society, Man).

5.1.2 Area of operation or the villages served

The number of villages served has a bearing on the working of the society in respect of management efficiency, membership and adequacy of business. Table 5.2 shows distribution of the societies according to the villages served.

Table 5.2 Distribution of the dairy societies according to area of operation

(Number of societies)

Sr. No.	Area of operation (villages served)	Karad Tehsil (Developed region)	Man Tehsil (Underdeveloped region)	Overall
1.	Single village	9	7	16
2.	Group of villages	1	3	4
	Total	10	10	20

It can be seen that in the developed region, 9 societies were meant for a single village while only 1 society had an area of operation covering more than one village. In underdeveloped region 7 societies were for single village only while 3 societies served a group of villages. At the overall levels 10 societies served a single village while 4 societies covered a group of villages. The range of villages served by a society varied from two villages (Umbraj Dairy Society, Karad) to five villages (Gondawale Dairy Society, Man).

5.1.3 Audit class

Audit class is the indicator of the health and success of the organisation. The records of the societies are audited by Government auditors almost every year. Considering the criteria like correctness of records, volume of business, observance of co-operative rules, etc., the auditor gives either A', B' or C' class to the society. Information regarding distribution of the societies according to audit class is presented in Table 5.3.

Table 5.3 Distribution of dairy societies according to audit class (1989-90)

(Number)

Audit class	Karad Tehsil (Developed region)	Man Tehsil (Underdeveloped region)	Overall
A - Class	7 (70.00)	-	7 (35.00)
B - Class	2 (20.00)	7 (70.00)	9 (45.00)
C - Class	1 (10.00)	3 (30.00)	4 (20.00)
Total	10 (100.00)	10 (100.00)	20 (100.00)

(Figures in the parenthesis are percentages to total)

It is clear from Table 5.3 that 70 per cent societies in the developed region i.e. Karad tehsil had 'A' class, 20 per cent had 'B' class and 10 per cent had 'C' class. In the underdeveloped region however not a single society was in 'A' class, 70 per cent societies had B' class and 30 per cent societies had 'C' class. In this tehsil, maximum number of societies had 'B' class. At the overall level, maximum number of societies (45%) were in 'B' class, 35 per cent in 'A' class and only 20 per cent societies were in 'C' class.

5.1.4 Membership

Adequate membership is also an important factor responsible for the success of the society because the members are the direct participants in respect of share capital, deposits and ultimately the working capital. They are also the beneficiaries in respect of credit, feeds and suppliers of milk. They are also responsible for the management of the society. Members of the selected societies consisted of the cultivators, landless labourers, non-cultivators and female members. The composition of the members of different categories for the selected societies is presented in the Table 5.4.

It can be seen that in both tehsils a large majority of the members belonged to the category of cultivators. At the overall level, the proportion of cultivator members was 86 per cent.

Table 5.4 Average composition of the members of the selected dairy societies

(Numbers)

Sr. No.	Category of members	Developed Area	Underdeveloped Area	Overall
1.	Cultivators	189.3 (83.57)	155.6 (89.78)	172.45 (86.27)
2.	Landless labourers	5.3 (2.34)	0.9 (0.52)	3.1 (1.55)
3.	Non-cultivators	2.5 (1.10)	2.1 (1.22)	2.3 (1.15)
4.	Female members	29.4 (12.98)	14.7 (8.48)	22.05 (11.03)
	Total	226.5 (100.00)	173.3 (100.00)	199.9 (100.00)

(Figures in the parentheses are percentages to total)

This proportion was relatively more in Man tehsil. Another interesting feature was the female members. At the overall level, 11 percent of the members belonged to this category and the proportion was relatively more in the developed region.

The members belonging to the category of 'landless labourers' and 'non-cultivators' was hardly one to two per cent.

The general information about the selected co-operative dairy societies is summarised in Table 5.5.

Table 5.5 General information of the selected dairy societies

Sr. No.	Items	Karad tehsil (Developed region)	Man tehsil (Undeveloped region)	Overall
1.	Average age of the societies (years)	15	9	12
2.	Average number of members per society	226.5	173.3	199.9
3.	Average number of female members per society	29.4	14.7	22.05
4.	Average milk collection per society (liters)			
	a) Cow milk	92,108	85,527	88,773
	b) Buffalo milk	69,998	48,764	59,381
5.	Average value of milk collected annually (Rs.)	6,54,191	5,06,056	5,80,124
6.	Average annual loss of milk in handling (liters/year)	174.5	87.2	130.8

5.2 Management of the dairy societies

As the Dairy societies are increasingly looked upon as business units, the management of these societies is assuming greater importance today. The societies have to undertake different activities on business lines for satisfying the members' needs and use the capital of the societies efficiently. The income of the society also needs to be adequate to meet the expenses and leave some profits for accumulation of different types of funds and distribute dividend to the members. The management of the dairy societies in modern times, therefore,

warrants business attitude and involves the knowledge of co-operative principles, co-operative accounting, business outlook and unity and cohesiveness among the members.

5.2.1 Secretaries of the dairy societies

The management of co-operative societies is democratic one. The managing committee consists of seven to eleven persons elected from among the members of the society with the chairman of the society as the chairman of the management committee. The members of management committee may not have necessary knowledge of the co-operative principles, co-operative rules and co-operative accounting and may also lack in business attitude. In view of this, a secretary with special training in co-operation is provided. The management of the society is the joint responsibility of the managing committee and the secretary. The managing committee decides the policies of the society. The chairman with the assistance of the secretary carries out day-to-day activities of the society. Success or failure of the society, thus, largely depends on the secretary. In view of this, an effort was made to assess the management aspects of the dairy co-operative societies by collecting information about the secretaries. The information about the secretaries of the selected societies is presented in Table 5.6

It can be seen that of the total 20 societies as many as 17 societies (85%) were having secretary for a single village. In the developed region, this proportion was relatively larger.

Table 5.6 Information about the secretaries of the selected dairy societies

(No. of secretaries)

Sr. No.	Particular	Karad tehsil (Developed region) (N = 10)	Man tehsil (Undeveloped region) (N = 10)	Overall
1.	Secretary working for			
	a) Single society	9 (90.00)	8 (80.00)	17 (85.00)
	b) Group of societies	1 (10.00)	2 (20.00)	3 (15.00)
2.	Distribution according to education			
	a) 7th to 10th	7 (70.00)	5 (50.00)	12 (60.00)
	b) 11th and onwards	3 (30.00)	5 (50.00)	8 (40.00)
3.	Training in co-operation			
	a) Training for 15 days	-	-	-
	b) Training for 1 month	2 (20.00)	3 (40.00)	5 (25.00)
	c) Training for 3 months	5 (50.00)	4 (40.00)	9 (45.00)
	d) Training for 6 months	3 (30.00)	3 (30.00)	6 (30.00)
4.	Experience of working			
	a) Upto 5 years	2 (20.00)	4 (40.00)	6 (30.00)
	b) 6 - 10 years	1 (10.00)	3 (30.00)	4 (20.00)
	c) 11 -15 years	5 (50.00)	2 (20.00)	7 (35.00)
	d) 16 years and above	2 (20.00)	1 (10.00)	3 (15.00)
5.	Residence			
	a) At Head quarter	7 (70.00)	9 (90.00)	16 (80.00)
	b) Away from H.Q.	3 (30.00)	1 (10.00)	4 (20.00)
6.	If away from head quarter visits to the society per week			
	a) Daily	2 (66.67)	1 (100.00)	3 (75.00)
	b) Thrice a week	1 (33.33)	-	3 (25.00)

(Figures in parentheses indicate percentages to the total)

The level of education of the secretaries varied from 7th standard to graduation. Out of 20 secretaries, 12 secretaries (60%), had education upto S.S.C., while 8 secretaries (40%) had education varying from 11th standard to graduation. In the developed region, 7 secretaries out of 10 had education upto 10th standard; while the remaining 3 secretaries had taken higher education above 11th standard. In case of underdeveloped region i.e. Man tehsil, 5 secretaries out of 10 had education upto 10th standard and the remaining 5 secretaries had higher education.

All the secretaries had received special training in co-operation. The period of training varied from one month to six months. Out of 20 secretaries, 5 secretaries (25%) had training for one month, 9 secretaries (45%) three months and six secretaries (30%) had training for six months.

Out of 20 secretaries, six (30%) had experience of working as secretary for five years, four secretaries (20%) had experience of 6 to 10 years. Seven secretaries (35%) had experience from 11 to 15 years and 3 secretaries (15%) had experience for more than 15 years. This experience included the experience of working in multi-purpose co-operative societies. The maximum number of secretaries had experience ranging from 11 to 15 years.

Regarding the residence of the secretaries, 16 secretaries (80%) were residing at H.Q. villages and only 4

secretaries (20%) were residing away from H.Q. village. Three secretaries out of four who were not staying at H.Q. village were visiting the society daily while one secretary was visiting the society thrice a week.

5.2.2 Chairmen of the dairy societies

The chairmen are the most important persons in the management of the societies. They have to command the respect and confidence of the members through their sincere and honest behaviour, know their problems and production needs and try to meet the needs in time. They must have an ability to conceive new ideas of dairy development, must have foresight, business attitude and must look around and see what changes and developments are taking place in the field of dairy development. In short, chairmen have to be very dynamic persons in the affairs of the societies. In view of that, the information about the chairmen of the selected dairy societies was collected in the study and the same is summarised in Table 5.7.

Table 5.7 Information about the chairmen of the selected dairy societies

(Number)

Sr. No.	Particulars	Karad Tehsil (Developed region)	Man Tehsil (Underdeveloped region)	Overall
1.	Distribution by age (years)			
	a. Below 30	1 (10.00)	1 (10.00)	2 (10.00)
	b. 31-40	2 (20.00)	5 (50.00)	7 (35.00)

1	2	3	4	5
	c. 41-50	2 (20.00)	1 (10.00)	3 (15.00)
	d. 51-60	3 (30.00)	2 (20.00)	5 (25.00)
	e. 61 and above	2 (20.00)	1 (10.00)	3 (15.00)
	Total	10 (100.00)	10 (100.00)	20 (100.00)
*	Average age (years)	46.9	41.2	44.06
2.	Distribution by educational level			
	a. Illiterate	-	-	-
	b. Primary (upto 4th std.)	4 (40.00)	1 (10.00)	5 (25.00)
	c. Secondary (5th-10th std.)	4 (20.00)	8 (80.00)	12 (60.00)
	d. Higher secondary and college	2 (20.00)	1 (10.00)	3 (15.00)
Total		10 (100.00)	10 (100.00)	20 (100.00)
3.	Experience in the Management committee			
	a. upto 5 years	5 (50.00)	9 (90.00)	14 (70.00)
	b. 6 - 10 years	2 (20.00)	1 (10.00)	3 (15.00)
	c. 11- 15 years	1 (10.00)	-	1 (5.00)
	d. 16-20 years	-	-	-
	e. 21-25 years	2 (20.00)	-	2 (10.00)
	Total	10 (100.00)	10 (100.00)	20 (100.00)
*	Average experience (years)	8.75	3.05	5.9
4.	Special training in co-operation	Nil	Nil	Nil

(Figures in the parentheses indicate percentages to total)

It is seen from the Table 5.7 that at the overall level, maximum number of chairmen (35%) of the 20 dairy societies were in the age group of 31 to 40 years, 3 chairmen (15%) were in the age group of 41 to 50 years, 5 chairmen (25%) were in the age group of 51 to 60 years, while only 3 chairmen (15%) were above 61 years. The average age of the chairmen worked out to be 44.06 years. The youngest chairmen (28 years) was of the Ganesh Sahakari Dudh Vyavasaik Sanstha Ltd. Narawane while the oldest chairman (65 years) was that of the Baneshwar Sahakari Dudh Vyavasaik Sanstha Ltd. Mahimangarh.

Among the 20 chairmen, not a single chairman was found to be illiterate. Of the total 20 chairmen, 5 (25%) were having education upto 4th standard, 12 (60%) between 5th to 10th standard and 2 (15%) were having higher secondary and college education. In the underdeveloped region i.e. Man tehsil, 8 chairmen had secondary education. The chairman of Atakeshwar Dairy Society (Karad) had the highest education who was found to be a double graduate. Surprisingly, the situation was relatively superior in the underdeveloped region.

Distribution of chairmen according to experience as member of the management committee is also given in this table. Out of the total 20 chairmen, 14 (70%) were having experience upto five years, 3 (15%) had experience between 6 and 10 years. One (5%) had experience between 11 and 15 years and two (10%) had

experience between 21 and 25 years. The chairman of Wahagaon Sahakari Dairy Society (Karad tehsil) had the maximum experience of 30 years and the chairman of Mohi Dairy Society (Man tehsil) had minimum experience of one year. None of the chairmen had undergone training in co-operation.

5.2.3 Management committee

The managing committee members are required to be cohesive in thinking and co-operative in action. In addition, individual member of this committee is expected to contribute something towards policy decisions of the society.From this point of view,age,education, experience etc. are important criteria for the committee members. Information about the managing committee members of the selected dairy societies is given in Table 5.8.

It can be revealed that on an average there were 8 members in the management committee. At the overall level, the average age of the management committee members worked out to be 43.4 years, indicating that the members were quite matured and well experienced in life. Maximum members (36.25%) were in the age group of 41 to 60 years, followed by age group of 31 to 40 years (31.87%) and above 60 years (18.75%). Only 21 members (13.13%) were in the age group of below 30 years. It could be noted that a larger number of managing committee members in the underdeveloped region belonged to younger age groups. Out of total 160 members, 5.63 per cent were illiterate, 33.75 per cent had received primary education, 27.5 per cent had secondary

Table 5.8 Information about management committee members

(Number)

Sr. No.	Particulars	Karad Tehsil (Developed region) (N=80)	Man Tehsil (Underdeveloped region) (N=80)	Overall (N=160)
1.	Average number of managing committee members per society (excluding chairmen)	8	8	8
2.	Agewise distribution (years)	Number	Number	Number
a.	Below 30	5 (6.25)	16 (20.00)	21 (13.13)
b.	31-40	24 (30.00)	27 (33.75)	51 (31.87)
c.	41-60	33 (41.25)	25 (31.25)	58 (36.25)
d.	61 and above	18 (22.50)	12 (15.00)	30 (18.75)
	Total	80 (100.00)	80 (100.00)	160 (100.00)
*	Average age (years)	46.6	40.2	43.4
3.	Distribution by educational level			
a.	Illiterate	9 (11.25)	-	9 (5.63)
b.	Primary	20 (25.00)	34 (42.5)	54 (33.75)
c.	Secondary	25 (31.25)	19 (23.75)	44 (27.50)
d.	College	26 (32.56)	27 (33.75)	53 (33.12)
	Total	80 (100.00)	80 (100.00)	160 (100.00)
3.	Experience in the Management committee			
i.	Below 5 years	57 (71.25)	71 (88.75)	128 (80.00)
ii.	6 - 10 years	15 (18.75)	9 (11.25)	24 (15.00)
iii.	10 years and above	8 (10.00)	-	8 (5.00)
	Total	80 (100.00)	80 (100.00)	80 (100.00)

(Figures in the parentheses are percentages to total)

education, while 33.12 per cent had college education. Thus, the management committees were formed by associating persons having different educational levels. However, they were quite representative of the milk producers. Out of total 160 members, 80 per cent had experience between 6 to 10 years and only 5 per cent members were having experience more than 10 years. Not a single member had received any special training in co-operation.

Regarding number of members in the management committee, all the 20 dairy societies had eight members each excluding the chairmen.

5.2.4 Management committee meetings

Frequent and adequate number of meetings of the management committees is necessary to involve the participation of members in the decisions of the society when necessary. All decisions about the working of the society are supposed to be taken in the management committee. If the meetings are not held frequently and if the chairman himself takes the decision, it will be undemocratic. Table 5.9 gives the information about the distribution of societies according to the management committee meetings held during the year 1989-90.

It can be seen from Table 5.9 that, out of 20 societies, one society had taken 10 meetings, one society had 11 meetings during the year, sixteen societies had taken 12 meetings, one

Table 5.9 Distribution of societies according to management committee meetings in a year (1989-90)

(No. of societies)

Sr. No.	Particulars	Karad Tehsil (Developed Region)	Man Tehsil (Underdeveloped Region)	Overall
1.	Number of Meetings held			
	10 meetings	-	1	1
	11 meetings	-	1	1
	12 meetings	8	8	16
	13 meetings	1	-	1
	14 meetings	-	-	-
	15 meetings	1	-	1
	Total	10	10	20
	Average number of meetings	12.4	11.7	12.05
	Resolutions passed unanimously	All	All	All
	Meetings attended by the chairmen	All	All	All

society had 13 meetings and another one had 15 meetings during the year. On an average each society had 12 meetings of the management committee during the year. In the underdeveloped region, the average number of meetings held in a year was relatively less. On an average 52 resolutions were passed during the year. All the resolutions were passed unanimously and all the meetings were attended by the chairman.

5.2.5 Commission, excess or shortage of milk

Generally, in the collection of milk from different producers, there remains some excess milk. Loss of milk also takes place in handling. The information about commission on milk collection, excess or shortage of milk is presented in Table 5.10.

Table 5.10 Commission, excess or shortage of milk in handling (1989-90)

Sr. No.	Particulars	Karad Tehsil (Developed region) (N=10)	Man Tehsil (Underdeveloped region) (N=10)	Overall (N=20)
1.	Average loss of milk in handling (litres)	173.7	87.2	130.5
2.	Average excess of milk (litres)	399	332.4	365.7
3.	Rate of commission from Govt. Milk Schemes (Paise/litre) (w.e.f. 1-8-88)	10	10	10
4.	Is the commission sufficient	Number of societies reporting		
	a. Yes	1	-	1
	b. No	9	10	19
5.	If the commission is not sufficient, how do they manage?			
	a. Deduction from members' payment	2	6	8
	b. Through local milk sale	8	4	12

It is seen from Table 5.10 that the average loss of milk in handling was 130.5 litres per society per year. Loss of milk in handling was more in the developed region i.e. Karad tehsil than that in the underdeveloped region. However, the excess of milk in developed region was also relatively more. At the overall level, the average excess of milk was found to be relatively more in the underdeveloped region. Earlier, the rate of commission received from Government Milk Scheme was nine paise per litre for all the societies. However, the rate of commission was increased to ten paise per litre with effect from 1st August 1988. This commission is meant for the societies to meet their expenses. When the societies were asked whether this rate of commission was sufficient to meet the expenses, only one society told in affirmative, while the remaining 19 societies replied that this rate was not sufficient and they met their expenses by deducting some amount from members' payment and through local sale of milk which fetched higher price than the price fixed by the Government.

5.3 Activities undertaken by the dairy societies

Besides milk collection, the dairy societies in the sample studied had undertaken activities like providing short-term and medium-term loans, supply of feeds etc. Activities undertaken by the selected societies are given in Table 5.11.

Table 5.11 Activities undertaken by the society

Sr. No.	Particulars	Karad Tehsil (Developed region)	Man Tehsil (Underdeveloped region)	Total
1.	Milk collection	10 (100.00)	10 (100.00)	20 (100.00)
2.	Feed supply	2 (20.00)	3 (30.00)	5 (25.00)
3.	Credit supply	2 (20.00)	1 (10.00)	3 (15.00)

(Figures in the parentheses are percentages to total).

It is seen that out of 20 societies under study, only five societies undertook the activity of feeds supply and only three societies undertook the activity of credit supply in addition to their main function of milk collection. Three societies in the underdeveloped region undertook the activity of feeds supply upto 1987 but later on only one society continued the activity of feed supply. The other two societies stopped this activity because they were facing the problem of repayment from members. Usually the amount of feed was deducted from the members payment but the problem arose during the lean season when the milk producers' had no milk to supply to the dairy societies and repayment was delayed.

The dairy societies provide short-term advances for purchase of feeds and fodder and medium-term advances for purchase of dairy animals, construction of byres etc. The

information about the beneficiaries of credit supply by the societies is given in the Table 5.12.

Table 5.12 Beneficiary members of credit supplied by the societies

(No. of borrowers)

Sr. No.	Particulars	Karad Tehsil (Developed region)	Man Tehsil (Underdeveloped region)	Overall
1.	Short-term advances	9.35 (92.21)	7.27 (91.33)	8.31 (91.82)
2.	Medium-term advances	0.79 (7.79)	0.69 (8.67)	0.74 (8.18)
	Total	10.14 (100.00)	7.96 (100.00)	9.05 (100.00)
3.	Total members per society	226.5	173.3	199.9
4.	Percentage of borrowers to total number of members.	4.48	4.59	4.53

(Figures in the parentheses indicate percentages to total)

It can be seen that in the developed region i.e. Karad tehsil, the average number of borrowers was 10.14 which included 9.35 short-term borrowers and 0.79 medium-term borrowers. In the underdeveloped region i.e. Man tehsil, the number of borrowers was 7.96 which included 7.27 short-term borrowers and 0.69 medium-term borrowers. It was observed that the percentage of borrowers to total members of the society was very small. The

proportion of borrowers to total number of members in developed region was 4.48 per cent, while that in the underdeveloped region, it was 4.59 per cent. Thus, the proportion of borrowers to the total number of members in both the regions was more or less the same.

5.3.1 Short-term and medium-term advances

Short-term advances were granted for purchase of feeds and fodder while the medium-term advances were granted for purchase of dairy animals, construction of dairy byre etc. Composition of short-term and medium-term advances is given in Table 5.13.

Table 5.13 Composition of short-term and medium term-advances
(Figures in rupees)

Sr. No.	Advances	Karad Tehsil (Developed region)	Man Tehsil (Underdeveloped region)	Overall
1.	Short-term			
	For purchase of feeds	12,685 (100.00)	7912 (100.00)	10,298 (100.00)
	Total	12,685 (100.00)	7912 (100.00)	10,298 (100.00)
2.	Medium-term			
i.	Purchase of buffaloes	4400 (67.69)	-	2200 (43.56)
ii.	Purchase of cows	2100 (32.31)	3600 (100.00)	2850 (56.44)
	Total	6500 (100.00)	3600 (100.00)	5050 (100.00)

(Figures in the parentheses are percentages to total).

In developed region, the total amount of short-term advance was of Rs. 12,685 while that in the underdeveloped region, it was relatively less (Rs. 7912). This amount was advanced in the form of feeds. Medium-term advances were granted for purchase of cows and buffaloes. In Karad tehsil, the total amount was Rs. 6500 which included advances of Rs. 4400 for purchase of buffaloes and Rs. 2100 for purchase of cows. In Man tehsil, the total was Rs. 3600 and it was advanced only for purchase of cows. Thus in case of medium-term advances also, relatively more amount was granted in the developed region.

5.3.2 Average annual milk collected and its value.

The main function of the dairy societies was to collect the milk from milk producers at prices fixed by the Government on the basis of fat percentage and solids not fat (SNF) content. Milk collected by the societies was transported to the Government Milk Schemes. Government Milk Schemes received the milk and payment was made at the scheduled prices per litre on fat and SNF basis. Payment by the milk scheme was made either fortnightly or monthly. The average annual milk collected by the societies and its value is given in Table 5.14.

Table 5.14 shows that milk collection in the developed region i.e. Karad tehsil was 1,62,016 litres and its value was Rs. 6,54,191. The proportion of buffalo milk to cow milk was 1:1.5. The annual average quantity of milk supplied by each member worked out to 728.5 litres in a year and the average price per litre of cow and buffalo milk paid by the societies came to

Table 5.14 Average annual collection of milk and its value (1989-90)

Sr. No.	Particulars	Karad tehsil (Developed region)	Man tehsil (Underdeveloped region)	Overall
1.	Average milk collection (litres) per year			
	a. Cow milk	92,018 (252.1)	85,527 (234.3)	88,773 (243.2)
	b. Buffalo milk	69,998 (191.8)	48,764 (133.6)	59.381 (162.7)
	Total (a+b)	1,62,016 (443.9)	1,34,291 (367.9)	1,48,154 (405.9)
2.	Value (Rs.)	6,54,191	5,06,056	5,80,123
3.	Average annual milk supplied by each member (litres)	728.5	774.9	751.76
4.	Average price per litre of milk paid to members (Rs.)			
	a. Cow milk	3.69	3.49	3.59
	b. Buffalo milk	4.25	4.04	4.15

(Figures in the parentheses indicate average daily milk collection per society)

Rs. 3.69 and Rs. 4.25, respectively. In Man tehsil, the total annual milk collection per society was 1,34,291 litres and its value was Rs. 5,80,123. Proportion of buffalo milk to cow milk was 1:1.8. The annual average quantity of milk supplied by each member worked out to 774.9 litres and the average price paid per litre of cow and buffalo milk was Rs. 3.49 and Rs. 4.04, respectively.

Thus, the milk collection by the societies was relatively more in the developed region as compared to that in the underdeveloped region. Obviously, the amount received was also relatively more. However, the per member average milk supplied was relatively more in the underdeveloped region.

The relatively higher price per litre was paid in the developed region. It was told that it was because of the quality milk supplied by the producers in the developed region.

5.3.3 Procurement price and sale price of milk

To provide an assured regular market to milk, to provide a prompt payment and a fair price are also the important functions of dairy co-operatives. Table 5.15 presents the details about procurement price and sale price of milk.

Table 5.15 Procurement price and sale price of milk (1989-90)

Particulars	Karad tehsil (Developed Region)		Man tehsil (Underdeveloped Region)		Overall	
	Flush Period	Lean Period	Flush Period	Lean Period	Flush Period	Lean Period
Procurement price per litre (Rs.)						
Buffalo milk	3.76	4.53	3.82	4.57	3.79	4.55
Cow milk	3.26	3.93	3.12	3.94	3.19	3.94
Sale price per litre (Rs.)						
Buffalo milk	3.81	4.69	3.97	4.73	3.89	4.71
Cow milk	3.35	4.03	3.22	4.05	3.28	4.04

There was no significant difference between procurement price and sale price of milk between the dairy co-operative societies of Karad and Man tehsils. Whatever slight difference was there, it was because of charges on account of marketing and handling of milk. Interestingly, it was observed that there was significant difference in the prices received by the milk producers between flush and lean seasons. This difference was mainly because of the total quantity of milk supplied in a particular season. During the rainy season and winter season, there is increase in milk production so that period is called flush, while in summer, there is decrease in the milk production and the period is called as lean period. The prices for milk supplied are paid by the milk union on the basis of the quality of milk. Thus had found difference in sale price of milk in both tehsils.

5.4 Financial position and operational efficiency of the dairy co-operative societies

To examine the financial position and operational efficiency of the dairy co-operative societies was one of the objectives of the present investigation. Large volume of business, higher income and higher net profit are desirable trends and are indicators of better business. Higher or lower income alone does not reveal the net effect of business unless expenditure side is studied. The profit/loss position itself indicates the working efficiency of the societies. In view of

this, the income, expenditure, profit/loss position of the societies was studied.

5.4.1 Working capital

Working capital is the most important factor which is responsible for the business turn-over and ultimate success of the society. It is said to be a life-blood of any business organization and without adequate capital, normal working of the organization is difficult.

There are two sources of capital for a society : a. Internal sources and b. External sources.

The internal sources are share capital, accumulated funds and deposits from members. The external sources consist of deposits from non-members and borrowing from outside sources.

i. **Share capital** : The share capital is the most important fund of the society which is contributed by the members.

ii. **Deposits** : The object of accepting deposits by the societies is to provide facilities to the members and non-members to save their surplus money and also strengthen the financial position of the society. The people in the villages keep their deposits with the society when they have faith in the working of the society and their own ability to save.

iii. **Borrowings** : The societies generally are not self-sufficient and they depend on external borrowings to a varying extent.

Borrowing from external sources indicates extent of dependence of the societies on the outside finance.

iv. Accumulated funds : The accumulated funds of the societies is another important source of own funds. Total funds are accumulated out of profits. The amount of funds available with the society reveals its financial strength which is necessary to create confidence about the society in the minds of depositors and credit institutions. The information about average capital position of the sample societies is presented in Table 5.16.

Table 5.16 indicates that the average total working capital of the dairy societies in developed region was Rs. 61,019 out of which, 8.39 per cent was contribution from members as

Table 5.16. Working capital of the dairy societies

Sr. No.	Particulars	Karad tehsil (Developed region)	Man tehsil (Underdeveloped region)	Overall
	Working capital			
1.	Paid-up share capital from members	5122 (8.39)	3043 (30.10)	4082 (11.48)
2.	Deposits from members	94 (0.15)	359 (3.55)	226 (0.64)
3.	Borrowings	1020 (1.67)	-	510 (1.43)
4.	Accumulated funds	54,783 (89.78)	6707 (66.35)	30,745 (86.45)
Total		61,019 (100.00)	10,109 (100.00)	35,563 (100.00)

(Figures in the parentheses indicate percentages to total)

Fig.1 Working capital of the dairy societies with its components

share capital, 0.15 per cent was deposits from members, 1.67 per cent was borrowings and large part 89.78 per cent was accumulated funds. In underdeveloped area i.e. Man tehsil, the average total working capital was Rs. 10,109 which included 30.10 per cent share capital, 3.55 per cent deposits from members and 66.35 per cent accumulated funds. Not a single society in the underdeveloped region had borrowed funds from external sources. Overall average total working capital was Rs. 35,563 which included 11.48 per cent share capital, 0.64 per cent deposits from members, 1.43 per cent borrowing and 86.75 per cent accumulated funds. It was observed that the accumulated funds formed the major share of the working capital in both the regions. The proportion of share capital from members was relatively higher (30.10%) in the underdeveloped region as compared to developed region (8.39%). The proportion of accumulated funds was however, more in the developed region. Deposits from members and borrowing from external sources formed very negligible proportion.

5.4.2. Funds of the dairy societies

Accumulated funds of the societies included reserve fund, building fund, price fluctuation fund and other funds, which included religious contributions, depreciation fund, educational fund etc. The details of funds are shown in Table 5.17.

Table 5.17 Average funds of the selected dairy societies (1989-90)

(Rupees)

Sr. No.	Particulars	Karad tehsil (Developed region)	Man tehsil (Underdeveloped region)	Overall
1.	Reserve fund	19,263 (35.16)	3545 (52.86)	11,404 (37.09)
2.	Building fund	29,713 (54.24)	127 (1.9)	14,920 (48.53)
3.	Price fluctuation fund	588 (1.07)	-	294 (0.96)
4.	Others	5219 (9.53)	3034 (45.24)	4126 (13.42)
Total		54,783 (100.00)	6707 (100.00)	30,744 (100.00)

(Figures in the parentheses indicate percentages to total)

It can be revealed from the Table 5.17 that the average total funds of the dairy societies in developed region were nine times more as compared to those in the underdeveloped region. It was found that in the developed region, total funds consisted of 35.16 per cent reserve funds, 54.24 per cent building fund, 1.07 per cent price fluctuation fund and 9.53 per cent other funds. In the underdeveloped region, the total fund consisted of 52.86 per cent reserve fund, 1.9 per cent building fund and 45.24 per cent other funds. In the underdeveloped region, no contribution was made towards the price fluctuation fund. In the developed region, the building fund had the highest proportion (54.24%) in

the total, while in the underdeveloped region the reserve fund had the highest proportion (52.86%). The absolute amount of total funds was relatively more in the developed region. However, its proportion was relatively higher in the underdeveloped region.

5.4.3 Assets of the dairy societies

Assets of the societies included building/shed, dairy machinery and equipments like cans, lactometer, Gerber's apparatus, buterometer, measurers, plunger, etc. Subsidy is granted by the Government to the dairy societies in the form of dairy equipment and in cash. The details of the assets are given in Table 5.18.

5.18 Average assets per dairy society (1989-90)

Sr. No.	Item	Karad tehsil (Developed region)	Man tehsil (Underdeveloped region)	Overall
1.	Building/shed value	40,449 (89.45)	7,627 (51.50)	24,038 (80.09)
2.	Machinery and equipments	4,769 (10.55)	7,183 (48.50)	5,976 (19.91)
	Total	45,218 (100.00)	14,810 (100.00)	30,014 (100.00)

(Figures in the parentheses indicate percentages to total)

Table 5.18 indicated that in the developed region, total asset per dairy society were Rs. 45,218. It consisted of 89.45 per cent in the form of buildings and 10.55 per cent in the

form of machinery and equipments. In the underdeveloped region, the total assets were worth Rs. 14,819 which included 51.50 per cent buildings/shed and 48.50 per cent in the form of machinery and equipment. At the overall level, total value of the assets was Rs. 30,014 out of which 80 per cent was the investment in building alone and 20 per cent was in the form of machinery and equipment.

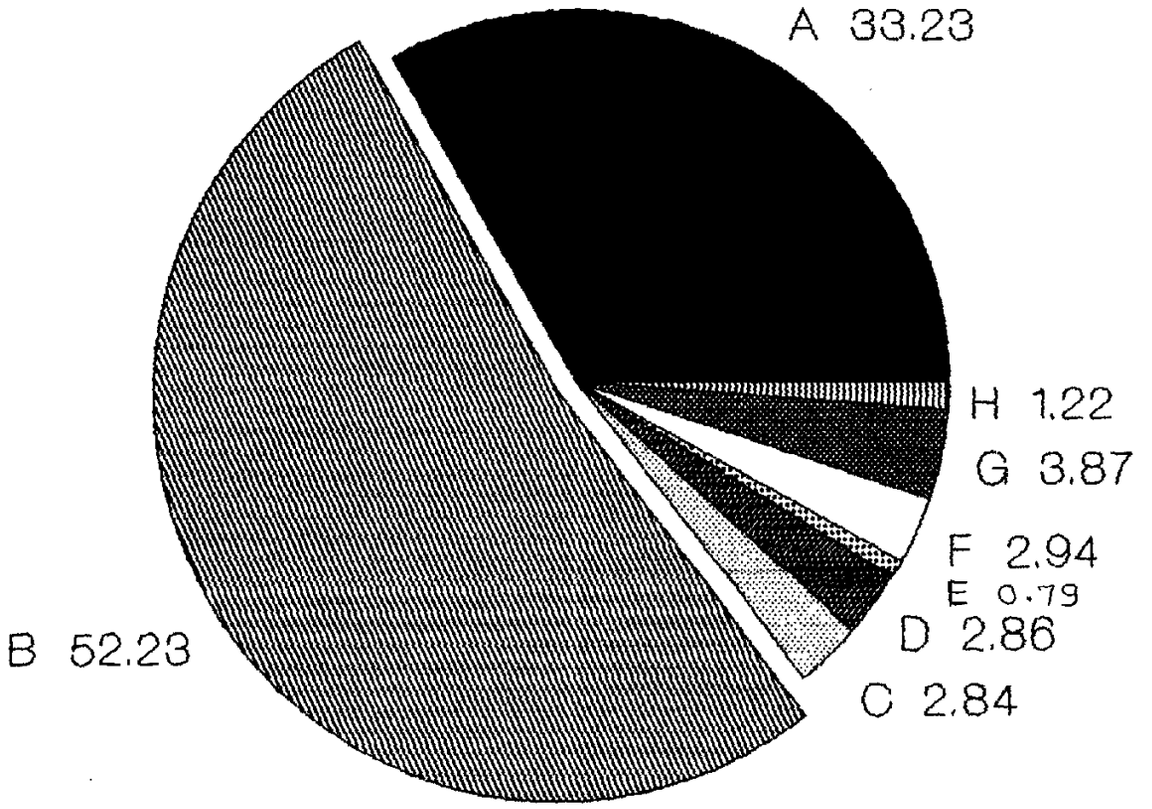
It could also be noted that majority of the societies in the developed region had their own building; while it was not so in case with the dairy societies in the underdeveloped region.

5.5 Income and expenditure

The study of details of income and expenditure of societies is necessary to understand the financial position. It also tells us about the management of the societies. These societies are now increasingly being looked upon as business units.

5.5.1 Income of the dairy societies

The sources of income of the selected dairy societies consisted of interest on loans advanced to members, commission for milk collection from Government and from milk producers, trading profit, interest on bank investment and bank saving, subsidies etc. The source-wise average annual income of the societies in both the regions is given in Table 5.19.



A	Commission for milk collection
B	Trading profit
C	Interest on bank investment
D	Subsidy
E	Interest on bank saving
F	Interest on loans to members
G	Commission for feeds
H	Others

Fig. 2 Income of the dairy societies with its components

Table 5.19 Average income of the dairy societies (1986-87 to 1988-89)

(Figures in rupees)

Sr. No.	Particulars	Karad tehsil (Developed region)	Man tehsil (Underdeveloped region)	Overall
1.	Commission for milk collection			
a.	From Government	10,521 (24.4)	8,057 (19.74)	9,289 (22.14)
b.	From milk producers	2,024 (4.69)	7,285 (17.85)	4,654 (11.09)
2.	Commission in feed supply	1,999 (4.64)	1,252 (3.07)	1,625 (3.87)
3.	Trading profit	24,080 (55.84)	19,760 (48.42)	21,920 (52.23)
4.	Interest on loans to members	1,556 (3.61)	910 (2.23)	1,233 (2.94)
5.	Subsidy	978 (2.27)	1,421 (3.48)	1,199 (2.86)
6.	Interest on bank investment	387 (0.90)	2,000 (4.90)	1,193 (2.84)
7.	Interest on bank saving	563 (1.31)	107.8 (0.26)	335 (0.79)
8.	Others	1,014 (2.35)	20.00 (0.05)	517 (1.22)
	Total	43,121 (100.00)	40,812 (100.00)	41,966 (100.00)

(Figures in the parentheses indicate percentages to total)

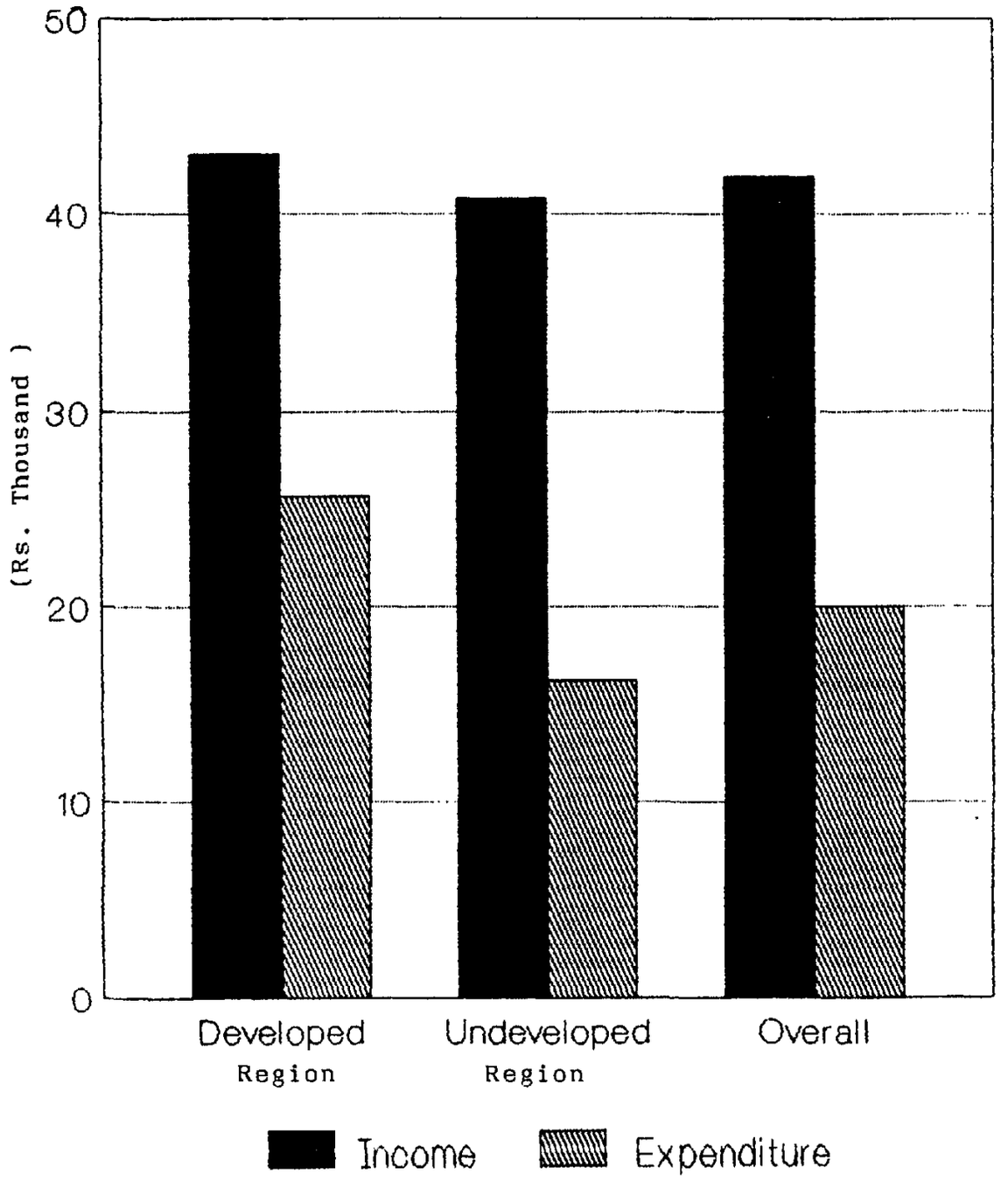


Fig. 3 Average income and expenditure of the dairy societies

It could be seen from the Table 5.19 that the overall average total income of the twenty societies under study was Rs. 41,966 of the total income, commission for milk collection constituted 33.23 per cent, commission in feed supply 3.87 per cent, trading profit 52.23 per cent, interest on loans to members 2.94 per cent etc. It was seen that average income of the societies in the Karad tehsil i.e. developed area was Rs. 43,121.4. This included 29.09 per cent commission for milk collection, 4.64 per cent commission for feeds, 55.84 per cent trading profit, 3.61 per cent interest on loans to members, 2.27 per cent subsidy, 0.9 per cent interest on bank investment, 1.31 per cent interest on bank saving, 0.01 per cent bank dividend and 2.34 per cent others i.e. card selling, bonus from milk schemes.

In underdeveloped area i.e. Man tehsil, total income was Rs. 40,812 out of which 37.59 per cent commission for milk collection, 3.07 per cent commission for feeds, 48.42 per cent trading profit, 2.23 per cent interest on loans to members, 3.48 per cent subsidy, 4.9 per cent interest on bank investment, 0.26 per cent interest on bank saving, 0.01 per cent bank dividend and 0.04 per cent others. It was observed that in general, major income of the dairy societies was from trading profit followed by commission for milk collection, commission for feeds and interest on loans to members. This was because the collection of milk, supply of feeds and advancing short-term and medium-term loans to members are the main functions of the societies and hence sources

of profit. Subsidy for societies in the underdeveloped area was greater than those in the developed area. Minimum income of the sample societies was Rs. 12,406 (Bidal Dairy Society, Man) and maximum was Rs. 1,44,639 (Gondawale Dairy Society, Man) since there was wide variation in the volume of business in terms of milk collection and supply of inputs, there was wide variation in income of the societies.

5.5.2 Expenditure of the dairy societies

The dairy societies had incurred expenditure on various items such as salaries, bonus to staff, allowances to committee members, traveling expenses, rent of building, lighting charges consumable material etc. The average annual itemwise expenditure as also the proportion to total expenditure are given separately for the two regions under study in Table 5.20.

In the developed region, the average expenditure of the dairy societies was Rs. 25, 627. This included 65.72 per cent. Salary of staff, 7.09 per cent meeting expenses, 6.09 per cent spent on consumable material used. The other important items of expenditure were the stationery and printing (4.49%), bonus to staff (4.13%) depreciation on deadstock (3.72%) and rent of buildings.

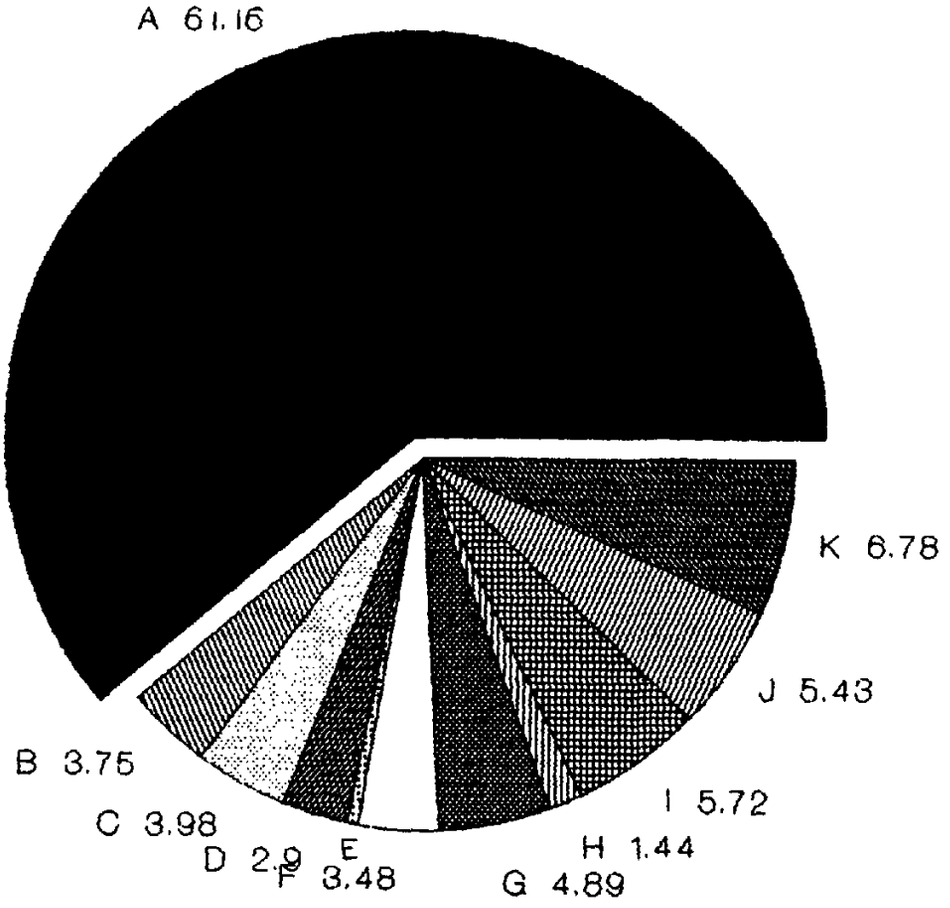
In the underdeveloped region, the average total expenditure of the dairy societies was Rs. 16, 170. The major items were salary of staff (53.11%), consumable material (7.86%) depreciation on deadstock (8.88%), traveling expenses (7.24%)and audit fees(6.08%), stationery and printing(5.53%) etc.

Table 5.20 Average annual expenditure of the dairy societies (1986-87 to 1988-89)

(Figures in rupees)

Sr. No.	Particulars	Karad tehsil (Developed region)	Man tehsil (Underdeveloped region)	Overall
1	Salaries of staff	16,843 (65.72)	8,588 (53.11)	12,715 (60.84)
2	Bonus to staff	1,059 (4.13)	506 (3.13)	782 (3.75)
3	Allowances to members	92 (0.36)	40 (0.25)	66 (0.32)
4	Traveling expenses	491 (1.92)	1,171 (7.24)	831 (3.98)
5	Rent of building and repairing of building	629 (2.45)	246 (1.52)	438 (2.09)
6	Lighting charges	129 (0.50)	208 (1.29)	169 (0.81)
7	Postage, telegram telephone charges	186 (0.73)	14 (0.09)	100 (0.48)
8	Audit fees	473 (1.85)	983 (6.08)	728 (3.48)
9	Stationery and printing	1,151 (4.49)	894 (5.53)	1,022 (4.89)
10.	Donation and funds	242 (0.95)	357 (2.21)	299 (1.44)
11	Depreciation and deadstocks	953 (3.72)	1,436 (8.88)	1,195 (5.72)
12	Meeting expenses	1,816 (7.09)	453 (2.80)	1,134 (5.43)
13	Amount of consumable material used	1,561 (6.09)	1,271 (7.86)	1,416 (6.78)
	Total	25,627 (100.00)	16,170 (100.00)	20,898 (100.00)

(Figures in the parentheses indicate percentages to total)



A	Salaries and allowances to staff
B	Bonus to staff
C	Traveling expenses
D	Rent of building, repairing of building and lighting charges
E	Postage, telephone, telegram charges
F	Audit fees
G	Stationery and printing
H	Donation and funds
I	Depreciation on dead-stock
J	Meeting expenses and others
K	Amount of consumable material used

Fig. 4 Expenditure of the dairy societies with its components

5.5.3 Expenditure on consumable material

Dairy societies needed some consumable material like alcohol, acid, washing powder, ice etc. In this material, ice was provided by the milk schemes free of cost. Though this item is included in the expenditure, it is analysed here in more details. The quantities and cost of other articles used by the societies is given in Table 5.21.

Table 5.21 Average per society annual expenditure on consumable material.

Sr. No.	Particulars	Developed region		Underdeveloped region		Overall	
		Qty.	Value	Qty.	Value	Qty.	Value
1.	Alcohol (liters)	15.72	628 (40.26)	12.79	511 (40.24)	14.25	570 (40.25)
2.	Acid (liters)	123.80	619 (39.63)	100.90	504 (39.70)	112.00	561 (39.67)
3.	Washing powder(kg.)	31.40	314 (20.11)	25.50	255 (20.10)	28.50	284 (20.08)
Total			1561 (100.00)		1271 (100.00)		1416 (100.00)
4.	Ice used (kg.) (free of cost)	55,005	-	44,764	-	49,844	-

(Figures in the parentheses indicate percentages to total)

In the developed region, on an average each society spend Rs. 1561 on consumable material. This included 40.26 per cent on alcohol, 39.63 per cent on acid and 20.11 per cent on washing powder. In the underdeveloped region, average expenditure on the consumable material was Rs. 1271. This

included 40.24 per cent on alcohol, 39.70 per cent on acid and 20.10 per cent on washing powder. Thus, relatively more amount was spend on this item in the developed region. At the overall level, the amount spent on consumable material worked out Rs. 1416. This included 40.25 per cent on alcohol, 39.67 per cent on acid and 20.08 per cent on washing powder.

5.5.4 Profit/loss position of dairy societies

While considering overall average business position of the selected societies in the sample, it was observed that the average income of the societies was more than the average expenditure. However, all the societies in the sample could not earn net profit. Some of them were in loss. Classification of the societies according to profit or loss is given in Table 5.22.

It can be seen from Table 5.22 that out of 20 dairy societies, 18 societies (90%) had earned profit and 2 societies (10%) had sustained losses. In the developed region, nine societies were in profit averaging Rs. 18,176. While one society was in loss (Rs. 2751). In the underdeveloped region also 9 out of 10 dairy societies made profit while one society was in loss. The average profit of the societies worked out to Rs. 24,965 which was more than that in the developed region. It seems that it is because of relatively less expenditure in case of underdeveloped region.

Table 5.22 Classification of dairy societies according to profit or loss (1989-90)

Sr. No.	Particulars	Developed region	Underdeveloped region	Overall
I)	Societies in profit			
i)	Number	9	9	18
ii)	Income (Rs.)	42,821	39,945	41,383
iii)	Expenditure (Rs.)	24,645	14,980	19,812
iv)	Profit (Rs.)	18,176	24,965	21,570
II)	Societies in loss			
i)	Number	1	1	2
ii)	Income (Rs.)	18,242	13,806	16,024
iii)	Expenditure (Rs.)	20,993	17,346	19,169
iv)	Loss (Rs.)	2751	3540	3145
III)	Overall			
i)	Number	10	10	20
ii)	Income (Rs.)	40,363	37,331	38,847
iii)	Expenditure (Rs.)	24,279	15,216	19,748
iv)	Profit (Rs.)	16,083	22,114	19,009

Among the two societies in loss, the loss was relatively more in case of the society in the underdeveloped region.

At the overall level also, the net profit was relatively more (Rs. 22,114) in the underdeveloped region as compared to that in the developed region (Rs. 16,083).

Considering all the 20 societies together, the average profit worked out to Rs. 19,099. Thus, the general picture was encouraging. The highest profit (Rs. 49,610) was made by the Khodshi Dairy Society, while the lowest (Rs. 1461) was in Ond Dairy Society. The highest loss sustained was Rs. 7,500 in case of Tondale Dairy Society and minimum was Rs.562 by Bidal Dairy Society.

5.5.5 Profit distribution

Profit earned by the societies are to be distributed as per the provision of the bye-laws of the societies. There are several items on which profit of the societies are distributed. They are reserve fund (25%), dividend to members, (upto 9 per cent of the face value of the shares), education fund (1.5 per cent or Rs. 10, if society has suffered loss), bonus to the employees of the society and contribution to other funds such as building fund, bad debt reserve fund etc. The accumulated losses of the societies are also made good from the profits earned. No society has strictly observed the provisions of the bye-laws in the distribution of profits. The manner in which profits were distributed by the dairy societies differed from society to society. The distribution of profits by the selected dairy societies for 1988-89 is presented in Table 5.23. In this study, 18 societies out of total 20 were in profit and the remaining two were in loss. So profit distribution of 18 societies is detailed out here.

Table 5.23 Profit distribution by the dairy societies

(Figures in rupees)

Sr. No.	Particulars	No.of Societies	Average amount (Rs.)	Overall average (Rs.) (N=18)
1.	Special reserve fund	2	3106	345.1
2.	Dividend to milk producers on shares	2	1784	198.2
3.	Building fund	5	6594	1831
4.	Bonus to milk producers	1	2761	153.4
5.	Bank saving	5	9773	2714
6.	Other National saving certificate etc.	4	5811	1452

It is seen from Table 5.23 that profit was distributed as per the provision in the bye-laws of societies. Two societies have carried profit to the special reserve fund with average amount of Rs. 3106 while overall average for 18 dairy societies was Rs. 345.1. Two societies used the profit as dividend to milk producer with average amount of Rs. 1784 and overall average was of Rs. 198.2. Large number of societies (5) have carried profit to building fund and average amount was Rs. 6594, while overall average was of Rs. 1831. Five societies have carried profit to bank savings, their average amount was Rs. 9773 and overall average was Rs. 2714. Four societies out of total 18 societies have used the profit for other purposes such as bonus to staff,

distribution to members in the from of kettles etc. Only one society had distributed bonus to milk producers'.

5.6 Operational efficiency of the dairy co-operative societies

Efficiency as outlined in the chapter on methodology is presented in Table 5.24. The economic tests include income-expenditure ratio, expenditure-income ratio, rate of return on capital and rate of turn-over.

Table 5.24 Income-expenditure ratio, Expenditure-income ratio and rate of return on capital (1989-90)

Sr. No.	Particulars	Developed Area	Underdeveloped Area	Overall
1.	Income (Rs.)	40,363	37,331	38,847
2.	Expenditure (Rs.)	24,279	15,216	19,748
3.	Net profit (Rs.)	16,083	22,114	19,099
4.	Working capital(Rs.)	1,11,019	60,109	85,564
5.	Trading profit (Rs.)	24,079	19,760	21,919
6.	Income-expenditure ratio	1.66:1	2.45:1	1.97:1
7.	Expenditure-income ratio	0.6:1	0.41:1	0.51:1
8.	Rate of return on capital (%)			
	a) at gross profit	21.69	32.87	25.62
	b) at net profit	14.48	36.79	22.32

Table 5.24 shows the income-expenditure ratio of the dairy societies from developed and underdeveloped regions. Income-expenditure ratio of the dairy societies from developed and underdeveloped regions was 1.66:1 and 2.45:1, respectively.

Although in developed region, income was higher than in underdeveloped region, income-expenditure ratio of dairy societies from underdeveloped region was more than that from developed region because in developed region expenditure was proportionately more resulting in the reduction of the ratio. The highest ratio of 3.51:1 was of Gondawale Dairy Society (Man) and the lowest ratio of 0.90:1 was of Tondale Dairy Society (Man). At overall level, the ratio was 1.97:1.

The expenditure-income ratio for dairy societies in the developed and underdeveloped region were 0.6:1 and 0.41:1 respectively. This meant that for earning one rupee income, expenditure incurred by the societies in the developed region was Rs. 0.60 and in underdeveloped region Rs. 0.41. Thus societies in the underdeveloped region i.e. Man tehsil incurred less expenditure indicating higher economic efficiency. For the society at Tondale which was least efficient one, the ratio was 1.10:1 and for the society at Gondawale which was the most efficient one, the ratio was 0.28:1. The ratio at overall level was 0.51:1. It was observed from income-expenditure and expenditure-income ratios that these two ratios were exactly opposite to each other. As one ratio increased, the other one decreased.

Rate of return to capital indicated the efficiency with which capital is used. The rate of return on capital at gross profit was 21.69 per cent in the developed region and 32.87 per

cent in the underdeveloped region. At overall level, the rate of return on capital at gross profit was 25.62 per cent. The rate of return at net profit was 14.48 per cent in the developed region, 36.79 per cent in the underdeveloped region and 22.32 per cent at overall level. The rate of return on capital both at gross and net profit in the underdeveloped region was much higher than the rate of return on capital in the developed region. Thus it denotes that capital is profitably used by the societies in the underdeveloped region.

5.6.2 Rate of turn-over of the dairy societies.

The success of dairy society directly depends on the volume of turn-over. With larger amount of turn-over, it is possible for the society to increase gross and net profit and transfer the benefits to the members. Therefore, the total turn-over of the society has important bearing on the working of the society.

The rate of turn-over is another concept used in judging the economic efficiency of the business. This indicated the frequency with which available capital of the society is used. In simple words, it means how many times each rupee of capital is used in the business in a year. The rate of turn-over is expressed as a percentage of the total turn-over to working capital. The management efficiency of the society is reflected in the rate of turn-over. Greater the frequency of capital use,

higher is the rate of turn-over. In modern times, the dairy societies are not only expected to collect milk from members producers but also function as a business unit. The rate of turn-over is the criteria to judge the operational efficiency of the dairy co-operative societies. It is expected that size of business has an effect on the rate of turn-over or the efficiency with which the business is carried out. In Table 5.25, an effort is made to find out relationship between total turn-over, average working capital and average rate of turn-over of the dairy societies in the sample.

Table 5.25 Rate of turn-over of the dairy societies (1989-90)

Sr. No.	Particulars	Developed region	Underdeveloped region	Overall
1.	Turn-over of business			
	a. Value of milk sold (Rs.)	6,54,191	5,06,056	5,80,123
	b. Value of feeds and fodder including S.T. advances(Rs.)	59,794	74,022	66,908
	c. M.T. advance (Rs.)	6,500	3600	5050
	Total (Rs.)	7,20,485	5,83,678	6,52,082
2.	Total working capital(Rs.)	1,11,019	60,109	85,564
3.	Rate of turn-over			
	a. To total turn-over	648	971	809
	b. Excluding value of milk	59.71	129	94.4

Table 5.25 indicated that in the underdeveloped region, eventhough the working capital was relatively less (Rs. 60,109), the average total turn-over was proportionately more than that in

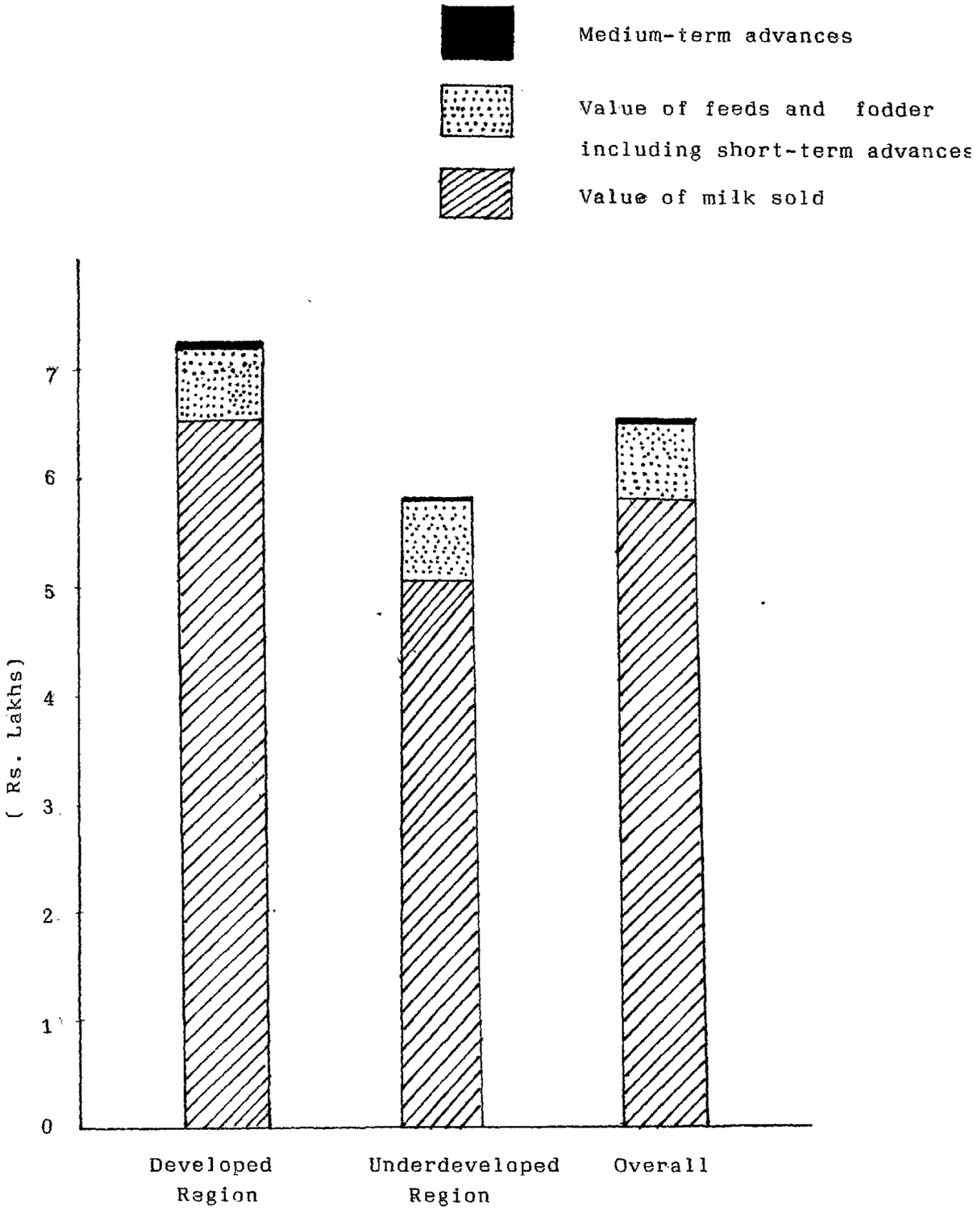


Fig. 5 Business turn-over of the dairy societies with its components

the societies in the developed region. Rate of turn-over of societies in the developed region was 648 per cent and that in the underdeveloped region was 971 per cent. At the overall, level it was 809 per cent. These rates of turn-over were very high because the value of the milk supplied to the Government Milk Schemes was also included in the total turn-over. In fact, the working capital of societies is not used for making payments to milk producers. Payment are made after the amount are received from the Government Milk Scheme every fortnight. Hence, societies have not to use their share capital for making these payments. The working capital of the societies is used for supplying feeds and fodder to the members either on credit or in cash and for giving medium term advances. Therefore, the rates of turn-over are worked out excluding the turn-over of milk. This rate of turn-over of the societies in the developed region worked out to 59.71 per cent and the in the underdeveloped region was 129 per cent. At the overall level, it was 94.4 per cent. It was observed that the rate of turn-over excluding value of milk increased with the increase in the volume of business of the society. This lead us to conclude that if management of the society is good, total turn-over and the rate of turn-over can be increased with the increase in the working capital, thus making efficient use of available capital.

5.7 Progress of the dairy societies

The dairying is one of the major sources providing substantial income as a subsidiary business to the farmers and

non-farmers too. It is in this context that the co-operative dairying is recognised as one of the principal instruments of economic and social change.

All the dairy societies supplying milk to the Government Milk Schemes are organised on the co-operative basis. These institutions are mainly engaged in collection, chilling and transportation of milk to the centers. They also provide feeds and fodder to members producing milk and also provide loans to milk producers to purchase milch animals of high potential from out side. In Satara district there were 787 dairy co-operative societies in 1985-86. The number increased to 1028 by June 1991. It means that there has been 30.6 per cent increased in the total number of societies in the district during last five years. Karad tehsil was purposively selected as developed region because of predominance of cash crops and being agriculturally and industrially developed region. There were 127 dairy societies in Karad tehsil by June 1986 and the number increased to 168 by June 1991. The total number of dairy societies in Karad tehsil had increased by 25.5 per cent during last five years. Reason behind selecting Man tehsil as the underdeveloped region is that out of two tehsils i.e. Man and Khandala (both considered as famine affected), Man tehsil possessed more number of dairy societies as compared to Khandala tehsil. Number of dairy co-operatives in Man tehsil were 42 during the year ending June 1986. The number increased to 66 in June 1991. In Khandala tehsil, there were only 49 dairy societies in June 1991.

It was not the mere increase in the number of societies, correspondingly there was increase in the membership, share capital, reserve fund, total turn-over etc. This trend in the growth i.e. progress of the dairy societies during the last three years in the two regions has been depicted in the Table 5.26.

Table 5.26 shows that there was increase in all parameters such as membership, share capital, reserve fund, borrowing, loan advances, total turn-over and net profit during the last three years. In the developed region the membership increased by 14 per cent during the period of three years, the annual increase in membership being 7 per cent. In the underdeveloped region, the membership increased by 17 per cent during 1987-88 over that in 1986-87. However, it declined by 11 per cent during 1988-89. The annual increase in the membership worked out to 3 per cent. At the overall level, increase in the membership was 10.32 per cent during first year and simply 0.44 per cent during the subsequent year with the annual increase of 5.38 per cent.

Share capital increased simultaneously with membership. The overall annual growth in the share capital was 5.38 per cent. Reserve fund of the societies in the developed region increased simultaneously with the share capital. However, the reserve fund of the societies in the underdeveloped region were found to be increased considerably (42.24%) during 1988-89. Over the period

Table 5.26 Progress of the sample dairy societies from 1886-87 to 1988-89

(Average per society)

Sr. No.	Particulars	Developed region			Underdeveloped region			Overall		
		1986-87	1987-88	1988-89	1986-87	1987-88	1988-89	1986-87	1987-88	1988-89
1.	Members (No.)	202.10 (100.00)	213.20 (105.5)	230.40 (114.0)	141.80 (100.00)	166.20 (117.21)	150.50 (106.14)	171.95 (100.00)	189.70 (110.32)	190.45 (110.76)
2.	Share capital (Rs.)	2021.00 (100.00)	2132.00 (105.5)	2304.00 (114.00)	1418.00 (100.00)	1662.00 (117.21)	1505.00 (106.14)	1719.50 (100.00)	1897.00 (110.32)	1904.50 (110.76)
3.	Reserve fund (Rs.)	202.10 (100.00)	213.20 (105.5)	230.40 (114.00)	1329.40 (100.00)	1349.80 (101.50)	1891.00 (142.24)	765.75 (100.00)	781.50 (102.10)	1060.70 (138.52)
4.	Borrowings (Rs.)	1020.00 (100.00)	572.00 (56.10)	864.00 (84.70)	-	-	-	510.00 (100.00)	286.00 (56.10)	432.00 (84.70)
5.	Loan advances (Rs.)									
	a. Short term	7312.00 (100.00)	9426.00 (128.90)	12685.60 (173.50)	4023.00 (100.00)	5986.00 (148.80)	7912.80 (196.70)	5667.50 (100.00)	7706.00 (135.90)	10,299.20 (181.70)
	b. Medium term	4100.00 (100.00)	4850.00 (118.30)	6500.00 (158.50)	5400.00 (100.00)	5780.00 (107.04)	3600.00 (66.67)	4750.00 (100.00)	5315.00 (111.90)	5050.00 (106.32)
6.	Total turn-over (Rs.)	6,44,215 (100.00)	7,10,506 (110.3)	7,88,010 (122.32)	7,41,538 (100.00)	7,05,379 (95.12)	9,57,821 (129.20)	6,92,876 (100.00)	7,07,942 (102.02)	8,72,915 (125.98)
7.	Net profit (Rs.)	14,244 (100.00)	12,580 (88.32)	19,747 (138.63)	6268 (100.00)	5751 (91.76)	13,094 (208.90)	10,256 (100.00)	9165 (89.37)	16,302 (160.10)

(Figures in parentheses indicate percentage change over 1986-87)

of three years, the annual increase was 21.12 per cent. At the overall level, reserve fund increased by 38.52 per cent during the period of three years with annual increase of 19.26 per cent.

It was found that only the societies in the developed region had borrowed funds from the external sources but there was a decreasing trend in the borrowings during the period of three years. There was 15.3 per cent decline in the borrowings and the annual decline worked out to be 7.65 per cent.

There was rapid increase in the loan advances by the societies in both developed and underdeveloped regions. There was 73.5 per cent increase in the short-term advances by the societies and 58.5 per cent increase in the medium-term advances over a period of three years in the developed region. The annual increase worked out to be 36.75 per cent and 29.25 per cent, respectively. The short-term advances by the societies in the underdeveloped region increased by 96.7 per cent, while there was a decline of 33.33 per cent in the medium-term advances during the period of three years with annual increase of 48.35 per cent and annual decline of 16.66 per cent, respectively. At the overall-level, short-term advance increase by 81.7 per cent and medium-term advances increased by 6.32 per cent during the period of three years with annual increase of 40.85 per cent and 3.16 per cent, respectively.

Increase in the total turn-over of the societies in the developed region was 22.32 per cent and that in the underdeveloped region was 29.2 per cent with annual increase of 11.16 per cent and 14.6 per cent, respectively. However, it was found that the annual turn-over of the societies in the underdeveloped region decreased by 4.88 per cent in the year 1987-88 and later increased by 34.08 per cent in the year 1988-89. At the overall level, increase in the turn-over was 25.98 per cent over a period of three years and annual increase was 12.99 per cent. The increase in the average total turn-over was relatively faster during the year 1988-89 (23.78%).

The net-profit of the dairy societies in the developed region increased by 38.63 per cent during the period of three years. During the year 1987-88 there was a decline of 11.68 per cent which was compensated by increase of 50.31 per cent during 1988-89. The net-profit of the dairy societies in the underdeveloped region increased by 108.9 per cent during the period of three years. There was decrease of 8.24 per cent during 1987-88 and increase of 117.14 per cent during 1988-89. At the overall level, the net profit was found to be decreased by 10.63 per cent during 1987-88 and increased by 70.73 per cent during 1988-89. The overall net profit was increased by 60.1 per cent.

5.8 Observations regarding working of the dairy societies

Since the secretaries of the societies are intimately associated with the day-to-day working of the societies of which they are incharge, it was proposed to assess the opinions of the secretaries about their performance and invite suggestions, if any for improvements. Accordingly, questions were posed to the secretaries in the questionnaire. The answers given by the secretaries are summarised below.

When asked whether the performance of his society was good/satisfactory/unsatisfactory, the secretaries of the seven societies (35 per cent) stated that the performance was good, the secretaries of eleven societies (55 per cent) stated that the performance was satisfactory, while secretaries of the two societies (10 per cent) told that the performance was unsatisfactory. Thus, the majority of the secretaries were satisfied with the working of the societies. This was a good sign.

The reasons stated by the secretaries for good or unsatisfactory performance are given below:

Reasons for the good performance of the societies stated by the secretaries were as follows:

1. Sample from the milk supplied by each milk producer was taken and tested carefully and quality of milk was maintained by the society.

2. Price per liter of milk was offered to the milk producers on the basis of fat percentage and S.N.F. percentage i.e. the quality of milk.
3. Timely and regular payment was made fortnightly to the milk producers.
4. Short-term and medium-term advances were provided for purchase of feeds and fodder and purchase of milch animals, construction of byre etc.
5. Feeds were made available by the society to the milk producers.
6. Members of the societies were aware about their duties and responsibilities.
7. The head quarters of the societies being on the road sides, transport and communication was easier.
8. The management committee members were active, experienced and conscious about their responsibilities.
9. The secretaries of the societies, as stated by the chairmen and other members of the societies, were honest to their duties.

Following were the reasons for the unsatisfactory performance of the society as stated by the secretaries.

1) Commission on milk collection provided by the Government Milk Scheme was not enough to meet the expenses, hence the societies had to deduct some amount from the payment of the milk producers.

2. Charges of milk transportation from village to milk collection center were high. This was because the dairy societies were situated near the road side and away from the village.
3. There was no good approach road to reach the village by truck.
4. Finance for purchase of milch animals was not provided by Commercial Banks. Proposals for the loans were not sanctioned in time and also they were not providing enough finance.
5. Due to weak financial position, societies could not afford higher payments to the trained staff.
6. Presence of more than one dairy society in a village had created unhealthy competition.

5.9 Problems faced by the dairy societies

The societies whose working (as stated by their secretaries)was either satisfactory or unsatisfactory encountered many difficulties in managing the affairs of the societies. The general difficulties experienced by the societies are given in the statement below:

Table 5.27 Problems faced by the dairy societies
(Number of respondents i.e. secretaries)

Sr. No.	Item	Difficulty	Number	Percentage to total (N=20)
1	2	3	4	5
1.	Area of operation	Area of operation of the society was small which did not provided adequate business.	15	75.00
2.	Capital	Societies own capital was very inadequate	14	70.00
3.	Credit	Finance by banks was not timely and adequate	9	45.00

1	2	3	4	5
4.	Transport and communication	The head quarter of the society was situated away from the villages and there were difficulties in transport and communication	2	10.00
5.	Secretary	The salary of the secretary was very low.	18	90.00
6.	Response from members	Members showed non-co-operative attitude and there was general apathy towards the working of dairy co-operative societies.	9	45.00
7.	Managing committee	The members of the managing committee were less educated, untrained and less interested which reflected on the efficiency of managing committee.	5	25.00
8.	Availability of feeds and fodder	i) The prices of feeds and fodder were increasing which affected badly the business of the society.	10	50.00
		ii) Suppliers did not repay the loans regularly.	4	20.00
9.	Income	The society had very low income as it had less business to handle.	6	30.00
10.	Commission for milk collection	The commission for milk collection was very low.	18	90.00
11.	Government milk scheme	Milk was not properly measured and tested by the supervisors in the Govt. Milk Schemes.	13	65.00
12.	Subsidy	Subsidy for building construction was not given by the Government.	11	55.00

5.10 Suggestions made

The secretaries had made certain suggestion for improvements or overcoming the problems which are summarised below:

Table 5.28 Suggestions made by the secretaries

Sr. No.	Item	Suggestions made	Secretaries: No. of respondents	Secretaries: Percentage to total (N=20)
1	2	3	4	5
1.	Area of operation	To get more business, area of operation of the societies should be increased by amalgamation of small dairy societies with the nearest dairy societies.	15	75.00
2.	Capital	a) To overcome the problem of inadequate capital, the Government should make contribution to the share capital of the societies which will improve their capital position.	10	50.00
		b) Besides the Government aid members should contribute in terms of deposits to increase working capital.	4	20.00
3.	Credit	Credit should be provided by commercial banks in time and in adequate amounts.	9	45.00
4.	Transport and communication	The approach roads should be constructed and the headquarter of the societies must be situated at the center.	2	10.00
5.	Secretary	The salaries of the secretaries should be increased.	18	90.00

1	2	3	4	5
6.	Response from members	The co-operative understanding should be developed among the members by giving them special practical training in co-operation and they should be made aware about the benefits of the societies.	9	45.00
7.	Managing committee	Special training should be given to the members of the managing committees to make them aware about co-operative principles, working of co-operative societies and duties and responsibilities of the members of managing committee.	5	25.00
8.	Availability of feeds and fodder	Government should provide subsidy on purchase of feeds and fodder to the milk producers in order to increase milk production.	14	70.00
9.	Income	To provide adequate business,the societies should be encouraged to undertake activities of supplying feeds and fodder which would provide them additional business and thereby increase their income.	6	30.00
10.	Commission for milk collection	a) Commission for milk collection should be increased from ten paise to seventeen paise per liter.	14	70.00
		b)Commission for milk collection should be increased from ten paise to twenty paise per liter	4	20.00
11.	Government Milk Scheme	While collecting milk from the societies by Government Milk Scheme, the milk should be measured correctly by the supervisors who come with the truck	13	65.00
12.	Subsidy	Government should provide subsidy for construction of buildings.	11	55.00

Problems faced by the dairy societies are enlisted in Table 5.27. From the opinions of the secretaries of the dairy societies, it was observed that salaries of the secretaries and commission for milk collection paid by the Government were the major problem in case of 90 per cent societies. About 75 per cent societies had reported that area of operation of the societies was very small and 70 per cent societies reported that the capital was inadequate. About 50 per cent societies reported that prices of feeds and fodder increased which affected badly the business of the society and 20 per cent societies indicated that the milk producers do not repay the amount of cattle feed in time.

Suggestions made by the secretaries of the dairy societies are enlisted in Table 5.28. From this table it can be revealed that majority of the secretaries (90 per cent) suggested that the salaries should be increased. Seventy five per cent secretaries suggested that the area of operation should be increased in order to increase the milk collection and to gain large profits through this process.

As many as 70 per cent secretaries suggested that the Government should put check on the increasing prices of feeds and fodder and provide subsidy for purchase of the same so that milk producers would be encouraged to produce more milk and to rear cross-bred cattle and buffaloes. As many as 70 per cent secretaries suggested that commission for milk collection should

be increased from ten paise to seventeen paise per liter while 20 per cent secretaries suggested that it should be twenty paise per liter.

5.11 Problems faced by the milk producers

In order to know the problems faced by the milk producers, information was collected in the study. They are summarised in Table 5.29.

Table 5.29 Problems faced by the milk producers

Sr. No.	Particulars	Number of milk suppliers reporting	Percentage to total (N=100)
1	2	3	4
1.	Milk testing		
	i. Societies take more quantity as sample than the requirement	37	37.00
	ii. Sometimes sample is taken but it is not tested	23	23.00
2.	Milk measurement		
	i. No problem	42	42.00
	ii. No proper measurement	56	56.00
3.	Frequency of rejection of milk is more	61	61.00
4.	Milk spoilage through society's negligence	38	38.00
5.	Milk prices		
	i. Not adequate	88	88.00
	ii. Milk price should be on fat and quality basis	47	47.00
6.	Milk handling by society		
	i. No problem	33	33.00
	ii. Handling losses are more	27	27.00
	iii. Cow and buffalo milk should be collected separately	20	20.00

It can be revealed that as many as 88 per cent of the milk producers were not satisfied with the prices of milk offered to them. As many as 47 per cent producers suggested that the milk price should be given on the basis of quality and fat content of the milk. As regards the rejection of milk, 61 per cent milk suppliers told that their milk was rejected due to low quality. About 27 per cent milk suppliers indicated that the losses in handling were more and 20 per cent suppliers indicated that. the buffalo milk should be collected separately.

5.12 Regression Analysis

Multiple regression analysis was carried out to estimate influence of selected variables on the total milk collection and net profit of the Dairy Co-operative Societies. The multiple regressions were estimated expressing total milk collection and net profit of the dairy societies as dependent variables with related independent variables as mentioned in chapter on methodology.

5.12.1 Milk supply functions for developed, underdeveloped region and at the overall level

The results of the estimated milk supply functions of the selected dairy societies in the developed region, underdeveloped region and for overall level are presented in Table 5.30.

It can be revealed from the Table 5.30 that the values of coefficient of multiple determination (R^2) ranged between

Table 5.30. Estimated milk supply function for developed region, underdeveloped region and for overall level

Region	Constant	Regression coefficient of: Milk/member (liter) X_1	Fixed capital (Rs.) X_2	Working capital (Rs.) X_3	Price/liter paid (Rs.) X_4	Period since establishment (years) X_5	R^2	F value
Developed	*** -110948 (18849.18)	** 45.6473 (15.4704)	*** 7.7047 (1.8509)	*** 3.3492 (0.8725)	NS 25,170.74 (20,244.50)	** 1842.86 (689.63)	0.9723	*** 28.081
Under-developed	*** -389909 (22402.84)	** 65.1431 (27.6493)	NS 0.3638 (2.4308)	*** 5.5385 (1.1210)	** 1,14,438 (45,085.62)	NS -5692.86 (3285.29)	0.9695	*** 25.429
Overall	*** -110362 (26423.71)	** 36.7896 (15.8473)	** 3.9388 (1.3787)	*** 4.6601 (0.7078)	NS 24,459.27 (22,956.37)	NS 1358.01 (865.62)	0.9261	*** 10.025

(Figures in parentheses are the standard errors of respective regression coefficients)

*** Significant at 1 per cent level of significance
** Significant at 5 per cent level of significance
* Significant at 10 per cent level of significance
NS Non-significant

0.9261 to 0.9723 indicating thereby that the five independent variables included in the function together explained 92.61 per cent of the total variation in the milksupplied to the society at the overall level. Similarly 97.23 and 96.95 per cent variation in the total milk supplied to the societies in the developed and underdeveloped regions respectively, was explained by the same variables. The results further indicated that the choice of the variables was appropriate and the form of the function chosen was well. All the five independent variables included in the function influenced positively the total milk collected by the society at overall level as well as in the developed and underdeveloped regions except the variable period since establishment of the society in the underdeveloped region. The magnitude of the regression coefficient of the independent variables varied across the region. The working capital (X_3) has influenced the total milk collected by the society quite significantly which indicates the scope for increasing the use of working capital for enhancing milk collection efficiency of the society.

The similar picture was depicted by the fixed capital of the society. However, the influence of fixed capital on milk collection in the underdeveloped region was non-significant. The magnitudes of the regression coefficient of quantity of milk supplied by member were positive and significant at 5 per cent level of significance indicating that the quantity of milk supplied by each member to the society played a vital role in

influencing the total milk supply to the society. The influence of price/liter paid was quite high on the total milk collection by the societies in the underdeveloped region alone. In the developed region, on the other hand, the period since establishment (X_5) of the milk societies influenced the milk collection significantly indicating thereby high level managerial efficiency of the old societies. However, in the underdeveloped region, the newly established societies seemed to be relatively more efficient than the old ones.

5.12.2 Profit function for developed region, underdeveloped region and at the overall level.

The results of the estimated profit function of the selected dairy societies in the developed region, under developed region and for overall level are presented in Table 5.31.

It was observed from the Table 5.31 that the coefficients of multiple determination (R^2) in case of the developed region, underdeveloped region and for overall level were 0.6080, 0.9409 and 0.5034, respectively. Thus, the four variables viz; total milk supplied (X_1) working capital (X_2), fixed capital (X_3) and audited working performance of the society (X_4) included in the functions explained 60.80, 94.09 and 50.34 per cent of the total variation in the profits of the societies in the developed region, underdeveloped region and for overall level, respectively. The aggregate influence of the

Table 5.31. Estimated profit function for developed region, underdeveloped region and for overall level

Region	Constant	Regression coefficient of: Total milk supplied X_1	Working capital X_2	Fixed capital X_3	Audit performance X_4	R^2	F value
Developed	NS 16585.28 (12829.68)	NS -0.0094 (0.1812)	NS 0.3689 (1.0876)	NS 3.2665 (2.4466)	NS -2593.55 (8770.69)	0.6080	NS 1.9388
Under-developed	*** -47061.20 (3007.37)	** -0.1133 (0.0390)	*** 1.4440 (0.2518)	** 0.6468 (0.2658)	* 4785.38 (2478.89)	0.9409	*** 15.9188
Overall	** -32712.2 (10153.74)	NS 0.0197 (0.0801)	NS 0.3862 (0.5239)	NS 0.6425 (0.6141	* 7234.21 (3550.95)	0.5034	** 3.5479

(Figures in parentheses are the standard errors of respective regression coefficients)

*** Significant at 1 per cent level of significance
** Significant at 5 per cent level of significance
* Significant at 10 per cent level of significance
NS Non-significant

variables included in the function in the developed region seemed to be non-significant. Similarly, the regression coefficients of the variables turned out to be non-significant in the same region.

However, in the underdeveloped region, the net profit earned by the society was influenced by the aforesaid variables collectively and also individually. The working capital (X_2), fixed capital (X_3) and audited working performance (X_4) of the society in the underdeveloped region influenced the profit of the society positively and significantly. However, the total milk supplied to the society resulted into reduction in profit which indicated that the milk should be handled, transported and preserved properly so as to avoid the losses.

At overall level, the variables included in the profit function though influenced significantly, the influence of individual variables was observed to be non-significant except the audited working performance of the society. However, the influence of each of the variables on profits of the society was non-significant though positive.

Since most of the regression coefficients of the variables included in the profit function have turned out to be non-significant, it is not worthwhile to rely upon the results for drawing specific inferences. The results of the profit

function analysis may, therefore, be considered as indicative and need not be used for policy formulation purposes in their present form.

5.13 Correlation Matrix

5.13.1 Milk supply function

The correlation matrix of the variables of supply function for developed region, underdeveloped region and for overall level is given in Table 5.32.

Table 5.32 Correlation matrix for milk supply function

a. Developed region

	X_1	X_2	X_3	X_4	X_5	Y
			*			**
X_1	1.0000	0.3045	0.6697	-0.2012	0.0910	0.7808
		(0.337)	(0.263)	(0.346)	(0.352)	(0.221)
X_2	-	1.0000	0.2683	-0.0469	-0.0584	0.5924
			(0.341)	(0.353)	(0.353)	(0.285)
						**
X_3	-	-	1.0000	0.0376	0.1342	0.8445
				(0.353)	(0.350)	(0.189)
X_4	-	-	-	1.0000	-0.0463	0.0334
					(0.0353)	(0.353)
X_5	-	-	-	-	1.0000	0.3067
						(0.337)

b. Underdeveloped Region

	X_1	X_2	X_3	X_4	X_5	Y
		**		**		*
X_1	1.0000	0.8369	0.4553	0.7727	0.2070	0.7454
		(0.194)	(0.315)	(0.224)	(0.346)	(0.236)
			*	*		**
X_2	-	1.0000	0.6401	0.7292	0.3034	0.8304
			(0.272)	(0.242)	(0.337)	(0.197)
						**
X_3	-	-	1.0000	0.4324	0.0555	0.8751
				(0.319)	(0.353)	(0.171)
						*
X_4	-	-	-	1.0000	0.0191	0.7328
					(0.353)	(0.241)
X_5	-	-	-	-	1.0000	(0.1378)
						(0.350)

c. Overall level

	X_1	X_2	X_3	X_4	X_5	Y
		*	*			**
X_1	1.0000	0.5497	0.5504	0.1074	0.1394	0.7399
		(0.197)	(0.197)	(0.234)	(0.233)	(0.159)
						**
X_2	-	1.0000	0.2964	0.3604	-0.0438	0.6025
			(0.225)	(0.220)	(0.235)	(0.188)
						**
X_3	-	-	1.0000	0.0385	0.3000	0.8652
				(0.236)	(0.225)	(0.116)
X_4	-	-	-	1.0000	-0.1341	0.2078
					(0.234)	(0.231)
X_5	-	-	-	-	1.0000	(0.3391)
						(0.222)

Correlation coefficient for developed and underdeveloped region

** Significant at 1 per cent level of significance (t = 0.765)
* Significant at 5 per cent level of significance (t = 0.632)

Correlation coefficient for overall level

** Significant at 1 per cent level of significance (t = 0.561)
* Significant at 5 per cent level of significance (t = 0.444)

Table 5.32 revealed that in developed region, the quantity of milk supplied by each member (X_1) had positive and significant relationship with working capital of the society (X_3) and dependent variable (Y) i.e. total milk collected by each society. However, there was no significant relationship between the total quantity of milk supplied by each member (X_1) and fixed capital (X_2) and period since establishment (X_5), whereas, the relationship between (X_1) and price paid per liter by the society (X_4) was negative. The fixed capital of the society (X_2) had no significant relationship with any of the

remaining dependent (Y) and independent variables (X_3), (X_4) and (X_5). The fixed capital had negative relationship with price/liter paid by the society (X_4) and period since establishment (X_5). The relationship between working capital (X_3) and dependent variable (Y) was found to be positive and highly significant. Whereas, the relationship between working capital (X_3) and price/liter paid by the society (X_4) and period since establishment (X_5) was non-significant. The relationship between price/liter paid (X_4) and period since establishment (X_5) was found to be negative and non-significant indicating that as period since establishment went on increasing price/liter paid went an decreasing. There was positive and non-significant relationship between price/liter paid (X_2) and dependent variable(Y).

In case of underdeveloped region, relationship between quantity of milk supplied by each member (X_1) and fixed capital (X_2) and price/liter paid by society (X_4) was found to be positive and highly significant at 1 per cent level of significance while the relationship between (X_1) and dependent variable (Y) was found to be positive and significant at 5 per cent level of significant. Relationship between fixed capital (X_2) and period since establishment (X_5) was found to be positive and non-significant. The relationship between fixed capital (X_2) and dependent variable (Y) was positive and highly significant while that with working capital (X_3) and price/liter paid (X_4) were positive and significant at 5 per

cent level of significance. The relationship between (X_2) and period since establishment (X_5) was non-significant. The relationship between working capital (X_3) and dependent variable (Y) was found to be positive and highly significant while that with price/liter paid (X_4) and period since establishment (X_5) was positive and non-significant. Price/liter paid (X_4) had positive and significant relationship with total milk collected by each society (Y) at 5 per cent level of significance. It was found that the price/liter paid by the society (X_4) had non-significant relationship with period since establishment (X_5). The relationship between period since establishment (X_5) and total milk collected by each society (Y) was found to be non-significant.

At overall level, relationship between quantity of milk supplied by each member (X1) and the dependent variable (Y) was found to be highly significant while that between fixed capital (X2) and working capital (X3) was positive and significant at 5 per cent level of significance. The relationship between total quantity of milk collected by each society (X_1) and price/liter paid (X_4) and period since establishment (X_5) was found to be positive but non-significant. The relationship between fixed capital (X_2) and working capital (X_3) as well as price/liter paid capital (X_4) was positive but non-significant. The relationship between fixed capital (X_2) and period since

establishment (X_5) was negative and non-significant. The relationship between working capital (X_3) and total milk collected by each society (Y) was positive and highly significant. Working capital (X_3) has not shown any significant relationship with price/liter paid (X_4) and period since establishment (X_5). The relationship between price/liter paid (X_4) and period since establishment (X_5) was found to be negative and non-significant while the relationship between (X_4) and dependent variable (Y) was positive but non-significant. The relationship between period since establishment (X_5) and total quantity of milk collected (Y) was found to be non-significant.

5.13.2 Profit function

The correlation matrix for the variables in profit functions is given in Table 5.33

Table 5.33. Correlation matrix for profit function
a. Developed Region

	X_1	X_2	X_3	X_4	Y
X_1	1.0000	0.8445** (0.189)	0.5924 (0.285)	0.1852 (0.347)	0.6002 (0.283)
X_2	-	1.0000	0.2683 (0.341)	0.2082 (0.346)	0.3935 (0.325)
X_3	-	-	1.0000	0.5335 (0.299)	0.7481* (0.235)
X_4	-	-	-	1.0000	0.3365 (0.333)

b. Underdeveloped Region

	X_1	X_2	X_3	X_4	Y
		**	**		*
X_1	1.0000	0.8793	0.8223	0.4740	0.7405
		(0.168)	(0.201)	(0.311)	(0.238)
			*		**
X_2	-	1.0000	0.6401	0.3220	0.9112
			(0.272)	(0.335)	(0.146)
					*
X_3	-	-	1.0000	0.3232	0.6355
				(0.335)	(0.273)
X_4	-	-	-	1.0000	0.3762
					(0.328)

c. Overall level

	X_1	X_2	X_3	X_4	Y
		**			*
X_1	1.0000	0.8687	0.5927	0.4335	0.6617
		(0.197)	(0.190)	(0.212)	(0.177)
X_2	-	1.0000	0.2964	0.4686	0.6105
			(0.225)	(0.208)	(0.187)
X_3	-	-	1.0000	0.1412	0.4825
				(0.233)	(0.206)
X_4	-	-	-	1.0000	0.4371
					(0.212)

Correlation coefficient for developed and underdeveloped region

** Significant at 1 per cent level of significance (t = 0.765)
* Significant at 5 per cent level of significance (t = 0.632)

Correlation coefficient for overall level

** Significant at 1 per cent level of significance (t = 0.561)
* Significant at 5 per cent level of significance (t = 0.444)

The Table 5.33 indicates that in case of developed region, positive and highly significant relationship was observed between total milk supplied (x_1), and working capital of the society (x_2) while the relationship between total milk supplied (X_1) and fixed capital (X_3),working performance of the society (X_4) and net profit earned by the society (Y) was found to be positive and non significant. The relationship between working capital (X_2) and fixed capital (X_3), working performance of the society (X_4) and net profit earned by the society (Y) was found to be positive and non significant. The relationship between fixed capital (X_2) and net profit (Y) was positive and significant at 5 per cent level of significance; while relationship between fixed capital (X_3) and working performance of the society (X_4) was found to be non-significant. Relationship between working performance of the society (X_4) and net profit (Y) was found to be positive and non significant. In case of underdeveloped region. The relationship between total milk supplied (X_1) and working capital (X_2), fixed capital (X_3) was found to be positive and highly significant while that between total milk supplied (X_1) and net profit (Y) was found to be significant at 5 per cent level of significance. The relationship between total milk supplied (X_1) and working performance of the society (X_4) was positive but non-significant. The relationship between working capital (X_2) and net profit (Y) was found to be highly significant while the relationship between working capital (X_2) and fixed capital

(X_3) was found to be significant at 5 per cent level of significance. There was non-significant relationship between working capital (X_2) and working performance of the society (X_4). The found relationship between fixed capital (X_3) and net profit (Y) was significant at 5 per cent level while the relationship between fixed capital (X_3) and working performance of the society (X_4) was non-significant. Also the relationship between working performance of the society (X_4) and net profit (Y) was positive but non-significant.

At overall level, the relationship between total milk supplied (X_1) and working capital of the society (X_2) was highly significant while that between total milk supplied (X_1) and net profit earned by the society (Y) was significant at 5 per cent level of significance. There was non-significant relationship between total milk supplied (X_1) and fixed capital (X_3) working performance of the society (X_4). No significant relationship was found between working capital (X_2) and fixed capital (X_3) working performance of the society (X_4), net profit (Y). ALso non-significant relationship was observed between fixed capital (X_3) and working performance of the society (X_4) net profit earned by the society (Y). The relationship between working performance of the society (X_4) and net profit (Y) was positive but non-significant.

6. Summary & Conclusion

6. SUMMARY AND CONCLUSIONS

In the traditional dairying system practised over centuries, fluid milk was generally used at the source of production and surplus milk after meeting the household demand was converted into ghee for sale in the village or in the neighbouring town markets. This pattern gradually changed and gave place to milk marketing system which included milk producers, middlemen and consumers. Under this system, the producers sold milk at the source of production in the nearby areas and handed over the surplus milk to the middlemen for sale in the urban markets. Since milk is a perishable product, the middlemen exploited the situation and offered comparatively very low prices to the producers. The milk producers who were not organised, could not break the vicious circle and earned practically no profit. However, the middlemen through their clever manoeuvring reaped the maximum benefits. This problem was solved by organising co-operative dairy societies with the main objective of collecting milk from its members and sending it to the urban markets for sale. Thus, dairy societies in the rural area of Maharashtra have helped to flourish the dairy industry as a subsidiary business for the farmers.

There has been a tremendous expansion of dairy co-operatives in the State during recent years. The programmes like 'operation flood' and existence of good markets like Bombay and other cities in the State have helped in this expansion. However, the progress of these dairy co-operatives is not uniform

in all the areas. Similarly, financial positions are also varying. Many milk co-operatives have made a good progress while some societies are in loss or have become defunct. With inflation, producers are demanding higher prices for milk while consumers want milk at reasonable rate. People also talk about efficiency in collection, processing and distribution of milk. In order to pin point the reality at the micro level, a scientific investigation is necessary.

The present investigation was carried out to study the activities undertaken by the dairy societies, financial positions and operational efficiency, progress of the dairy societies and constraints in the functioning of the dairy co-operatives.

A comparative study of the diary societies in the developed and underdeveloped regions of Satara district was carried out. For this purpose, two tehsils viz., Karad and Man from developed and underdeveloped regions respectively, were selected. In all 20 societies, 10 from each tehsil were selected for the study. From each dairy co-operative, 5 members were selected randomly to evaluate the comparative benefits. Information on various activities of the societies and their beneficiaries were collected by the author personally in a specially designed questionnaire. The findings of the study are summarised below.

1. Since the general information such as average age of the society, area of operation or villages served, audit class,

number of members and composition of members of societies have a bearing on the success of the societies, they were studied. The average age of the selected societies at the overall level was 12 years. Almost all the societies were established before 1985. Average age of the societies in the developed region was 15 years and that in the underdeveloped was 9 years. Only one society in the developed region and three societies in the underdeveloped region served a group of villages. The area of operation of the remaining societies was found to be limited to a single village. Societies receiving audit class - A, B, C during 1989-90 were seven, two and one respectively, in the developed region; while none of the societies in the underdeveloped region got class - A. As many as seven societies were in the audit class - B and three societies were in the class - C. Average number of members per society in the developed region was 226.5. Of this total, 83.57 per cent were cultivators, 2.35 per cent landless laboures, 1.10 per cent non-cultivator and 12.98 per cent female members. In case of underdeveloped region, average number of members per society was 173.3 out of which 89.78 per cent were cultivators, 0.52 per cent landless laboures, 1.22 per cent non-cultivators and 8.48 per cent female members. Proportion of female member to the total was more in the developed region than that in the underdeveloped region.

2. Per society average quantity of cow and buffalo milk supplied annually in case of developed region was 92,108 liters and 69,998 liters, respectively. In the underdeveloped region,

the figures were 85,527 liters and 48,764 liters, respectively.

3. The dairy co-operative societies were registered under the Co-operative Act. They were found to be functioning as per the democratic principles laid down in the bye-laws. It was observed that nearly all the societies had elected their managing committee for a period of five years. The educational standard of the majority of the members of the managing committee was of College level in the societies in the developed region ; while in the underdeveloped region, majority of the members had education upto 5th standard. Twenty five (31.25%) members and 19 (23.75%) members of the societies in developed and underdeveloped regions, respectively, had educational standard ranging from 5th to 10th standard. Majority of the Chairmen, Vice-chairmen and Members of the managing committee were in the age groups of 31-40 years and 41-60 years. Not a single chairman or member had received training in co-operative management.

4. The efficiency of the co-operative dairy society largely depends on the quality of secretarial services. Majority of the secretaries had Secondary School education, while 3 secretaries in the developed region and 5 secretaries in the underdeveloped region had college education. Majority of the secretaries (50%) in the developed region had working experience ranging between 11 and 15 years while 2 (20%) secretaries had experience of more than sixteen years. Four secretaries (40%) in the underdeveloped region had experience upto 5 years.

5. The average milk collection and its sale was comparatively more in the societies in the developed region than that of the societies in the underdeveloped region. The average annual loss of milk in handling for the societies in the developed region was two times more than that of the societies in the underdeveloped region. However, there was a slight difference in the average surplus of milk collected by the societies in the developed and underdeveloped regions. The milk losses were mainly in the form of spoilage of milk and losses during transportation.

6. Almost all the milk suppliers pointed out that the prices given to them were not at all satisfactory. The differences between the procurement price and the sale price of milk was not much. However, the difference between the prices received during the flush and lean season, was more.

7. Besides milk collection, two societies in the developed region and three societies in the underdeveloped region undertook the activity of feed supply. Since last two years, 2 societies in the underdeveloped region had stopped the activity of feed supply since there had been an hike in the feed prices and the milk producers could not repay the amount regularly. Only 2 societies in the developed region and 1 society in the underdeveloped region undertook the activity of short term and medium-term credit supply.

8. The dairy societies had helped their members in securing loans from banks for purchase of milch animals. Seven

beneficiaries in the developed region received medium-term loan amounting to Rs. 21,000 for purchase of cows/buffaloes. In the underdeveloped region, 12 beneficiaries received medium-term loan amounting to Rs. 36,000 for purchase of cows/buffaloes.

9. The average per society working capital in the developed and underdeveloped regions was Rs. 61,019 and Rs. 10,109. The average working capital in the developed region was nearly six times more than that of the societies in the underdeveloped region. The maximum working capital of all the societies in both the regions was in the form of accumulated funds (89.78 and 66.35 per cent respectively). It was followed by the paid-up share capital from members. Accumulated funds of the society composed of reserve fund, building fund, price fluctuation fund and others.

10. The average assets of the societies in the developed and underdeveloped regions was Rs. 45,218 and Rs. 14,810, respectively. The societies in the developed and underdeveloped regions had invested respectively 89.45 per cent and 51.50 per cent of the total investment on construction of buildings/shedes.

11. The important sources of income to the dairy societies were the commission on milk supplied to the milk unions, commission on feed supply, local sale of milk and occasionally deduction from the payment to the milk producers. For all the societies in both the regions, commission from milk supply was the main source of income and it was 29.09 per cent and 37.59 per

cent, respectively. Commission in the sale of cattle feed contributed very less amount i.e. 4.64 per cent and 3.07 per cent in the developed and underdeveloped regions, respectively.

12. A larger proportion of expenditure of the dairy societies was on salaries and bonus to staff. The dairy societies in the developed region had spent relatively more proportion of the income as compared with that by the dairy societies in the underdeveloped region.

13. Among the two regions, the dairy co-operatives in the underdeveloped region were found to be functioning more efficiently. The average profit earned by them was Rs. 22,114 ; while of the societies in the developed region was Rs. 16,083. Nine societies from each region were in profit while one society from each region was in loss.

14. The working efficiency of the dairy societies in both developed and underdeveloped regions was worked out by estimating the economic ratios viz., (i) Income - expenditure ratio, (ii) Expenditure-income ratio. The income expenditure ratio for the societies in the developed and the underdeveloped regions worked out to 1.66:1 and 2.45:1, respectively. The expenditure-income ratio in the developed and underdeveloped regions worked out to be 0.60:1 and 0.41:1, respectively. These two ratios indicated that the societies in the developed region were found to be less efficient than the societies in the underdeveloped region.

15. The dairy societies in both developed and underdeveloped regions had made lot of progress during the period

of last three years. The progress of dairy societies during the period of last three years revealed that there was increase in all parameters such as membership, share capital reserve fund, total turn-over, net profit etc. In the developed region, membership and share capital increased by 14 per cent during the period of three years; while borrowings decreased by 15.30 per cent. Short-term and medium-term advances increased by 73.50 per cent and 58.50 per cent, respectively. The total turn-over increased by 22.32 per cent with respect to base year i.e. 1986-87; while the net profit increased by 38.63 per cent. In the case of underdeveloped region, membership and share capital increased by 6.14 per cent; while reserve fund increased by 42.25 per cent. Societies in the underdeveloped region did not borrow any funds from external sources. The short-term loans increased by 96.70 per cent; while the medium-term loans decreased by 33.33 per cent. The total turn-over increased by 29.20 per cent; while net profit increased by 108.90 per cent with respect to base year.

16. Per beneficiary average annual milk supplied worked out to 728.5 liters in the case of developed region while it was 774.9 liters in underdeveloped region.

17. Multiple linear regression analysis was carried out to determine the factors influencing the milk supply and net profit of the dairy societies. The factors viz., milk supplied by each member, fixed capital, working capital and period since establishment were positive and significant in the case of milk

supply function in the developed region. Other factors viz. price per liter paid found to be non-significant. In the underdeveloped region, the factors viz., fixed capital and period since establishment were non-significant. In case of profit function, all the factors viz. total milk supplied by each society, working capital, fixed capital and audit performance of the society were found to be non-significant in the developed region; while all the factors viz. total milk supplied by each society, working capital, fixed capital and audit performance of the society were found to be significant in the case of underdeveloped region.

18. The shortcomings and bottlenecks in the working of the dairy co-operative societies and the reactions of the beneficiaries were also studied. The co-operative societies have pointed out certain problems viz. inadequate capital, less commission for milk collection, difficulties in transport and communication, subsidy etc. Unsatisfactory price for milk, rejection of milk by the society, improper milk testing and weighment, milk spoilage through societies and improper milk handling were the important problems reported by the milk producers.

6.2 Conclusion

1. Though the resource conditions in the developed region were better, the societies in the underdeveloped region were found to be functioning more efficiently. Although the income

of the dairy societies in the developed region was more, their expenditure was also proportionately more than that of the societies in the underdeveloped region, which had led to lower the income-expenditure ratio.

2. The major source of income of the societies was the commission on milk sold and profit earned in cattle feed trading activity. Out of the total twenty societies, only 5 societies undertook the activity of feed supply.

3. The societies who undertook the cattle feed trading activity alongwith the local sale of milk could obtain more profits and in turn were able to give better services to their members.

4. In many dairy societies, coverage in terms of members was very low as compared to the number of villages and population served.

5. Per member milk supplied was found to be less. This situation fails to provide adequate business to the society.

6. Majority of the milk producers did not take adequate advantage of the societies in respect of credit, feeds and fodder and medicines, which had led to lowering down the average benefit of co-operative credit per member.

7. Eventhough the working capital of the dairy societies was less, their total turn-over seemed to be high because dairy societies do not make payments to milk producers from their own funds but the payments were made when the same were received from the Government Milk Schemes. That is how the dairy societies

were able to carry on the business with limited capital and their rate of turn-over was very high.

8. Major income of the societies came from trading profit. The subsidy provided by the Government was very low. A good number of societies were in profit.

9. Besides all these conclusions, some constraints such as absence of regular milk testing, monopoly of big farmers, inefficient milk federation, milk collection by private vendors etc., were observed.

6.3 Suggestions

1. More number of milk producers should be enrolled as members and should be encouraged to undertake milk production and sale through the society so as to increase their turn-over.

2. Quantity of milk supplied per member should be increased by providing timely and adequate loans for purchase of cattle and buffaloes so that milk can be supplied by them continuously throughout the year.

3. In order to reduce the expenditure on feeds available in the market, the producers should go in for non-conventional type of feeds such as urea treated baggase which is cheaply available as well as highly nutritious.

4. A majority of the societies were found to be weak and small in size. These societies can be strengthened by merger, dissolution, reconstruction, etc. As a result the number of societies will be reduced but they can become more stronger and efficient.

5. The dairy societies should try to improve the position of their own capital by making members to buy more shares and by accepting deposits from members so as to increase their total working capital and relying less on the borrowing.

6. In order to reduce the malpractices at various levels and cut-throat competition, there should be only one co-operative dairy society in a village.

7. The Government and Milk Federations should strictly follow certain policies and procedures about milk collection, testing, measurement, area of operation and other necessary facilities for the dairy societies. Further, the dairy societies violating policies laid down should be warned once or twice, if necessary, criminal action should be taken against them.

8. Today the co-operative department has given permission to dairy societies for retail sale and are allowed to sell their milk to hotels, sweet-marts and messes. If the taluka federations starts their own milk distribution center at nearby cities they can earn more profits and through which the milk producers can be better off.

9. Dairy societies, at least in the underdeveloped region should implement the fodder development programme for increasing the milk production in such areas. It will help in keeping proper balance during flush and lean season.

10. Regular and standardised procedure for milk testing should be followed with the modern devices for milk testing.

11. Taluka federation should appoint Guidance and Control Squad' for checking and controlling the working of dairy co-operatives through the surprise visits to dairy societies.

12. The rules and regulations governing the cadres of employees should not differ from society to society so that it will bring harmony and consistency in work.

13. Due to religious obligations, cattle slaughtering is affected in India. Cow is revered as 'Gow-mata' (mother cow) since time immemorial. As a result, alongwith the productive animals, the farmers also rear unproductive ones. This increases the expenditure on milk production and ultimately the dairy business runs in loss. Thus keeping these obligations aside, farmers should cull the unproductive animals so as to raise the profit.

14. Every member of the society should have the feeling that they are the loosers, if anything goes wrong with the society.

7. Literature cited

7. LITERATURE CITED

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8. Appendices

APPENDICES

Annexure - I

QUESTIONNAIRE FOR SOCIETY

An Economic Evaluation of Dairy Co-operative Societies in Satara District.

(Information for the year July 1989 to June 1990)

1. Information of the society

   i. Name
   ii. Taluka
   iii. Registration No.
   iv. Year of Establishment
   v. Audit class in 1989-90

2. Whether the society is for a single village/group of villages? If for group of villages, give details.

i.

Sr. No.	Name of the village	Head quarter of society	Population (1981 census)	Distance from H.Q.(km)	Number of members from the villages
1.					
2.					
3.					
4.					

ii. Number of members :
   a. Cultivators :
   b. Landless labourers :
   c. Non-cultivators :
   d. Female members :

3. A. Authorised share capital : Rs.

   B. Paid up share capital : Rs.
      i. From members : Rs.
      ii. From Government : Rs.
      iii. From others : Rs.

   C. Value of each share : Rs.

4. Deposits with society

A. From members : Rs.
B. From non-members : Rs.

5. Borrowing of the society

A. D.C.C. Banks : Rs.
B. Government : Rs.
C. Other (specify) : Rs.
D. Donation Govt./Union : Rs.

6. Funds of the society (as on June 90)

A. Reserve funds : Rs.
B. Bad debt reserve fund : Rs.
C. Special Reserve fund : Rs.
D. Building fund : Rs.
E. Special emergency fund : Rs.
F. Price fluctuation fund : Rs.
G. Other funds : Rs.

7. Working capital of the society
(3B+4+5+6) : Rs.

7.A Activities undertaken by the society (Give details)
1.
2.
3.
4.

8. Inventory of fixed resources (capital cost)

a. Building/shed value : Rs.
b. Machinery - utensils and equipment : Rs.

Sr. No.	Particulars	Purchased No.	Purchased Amount	Subsidy No.	Subsidy Amount	Present value (Rs.)
1.	Cans with caps					
2.	Heating equipment					
3.	Lactometer					
4.	Gerber's apparatus					
5.	Buterometer					
6.	Measurer					
7.	Furniture					
8.	Any other					

9. i. Consumable material required for testing milk during a year.

Sr. No.	Item	Quantity	Cost per litre/kg	Total cost (Rs.)
1.	Chemicals			
	a. Alcohol			
	b. Acid			
2.	Others			

ii. Quantity of ice used (kg) ----------
Value (Rs.) ----------
iii. Loss of milk in handling (litres) ----------
iv. Excess of milk (litres) ----------

10. Credit Advances :
A. Short term loan :

Category	Number of borrowers	Amount advanced to members (Rs.) cash	feeds	others	Total (Rs.)
Short-term loan					

B. Medium term loan

Sr. No.	Purpose of loan	Number of borrowers	Amount Advanced (Rs.)
1.			
2.			
3.			

C. Rate of interest charged -
a. Non-defaulters (Per cent per annum)
b. Defaulters (Per cent per annum)

12. Milk collection (annual)

Category	From members		From non-members		Total	
	Quantity supplied (liters)	Value (Rs.)	Quantity supplied (liters)	Value (Rs.)	Quatity supplied (liters)	Value (Rs.)
i. Cow milk						
ii. Buffalo milk						

14. Other turnover

Sr. No.	Particulars	Quantity handled (kg.)	Value (Rs.)
1.	Feeds		
2.	Fodder		
3.	Medicine		
4.	Any other		

15. Income of the society : (For last 3 years)

Item	1986-87	1987-88	1988-89
i. Commision for milk collection			
a. From Government : Rs.			
b. From milk producer : Rs.			
c. Any other : Rs.			
ii. Commision for feeds : Rs.			
iii. Trading profit : Rs.			
iv. Interest on loans to members : Rs.			
v. Income from rent : Rs.			
vi. Interest on speical reserve fund : Rs.			
vii. Bonus given by Govt. to society : Rs.			
viii. Interest on feeds supplied to member : Rs.			
ix. Subsidy			
x. Interest on bank investment : Rs.			
xi. Interest on bank saving : Rs.			
xii. Bank dividend : Rs.			
xiii. Others : Rs.			

16. Expenditure of the society

i. Interest paid on deposits	: Rs.
ii. Interest paid on borrowings	: Rs.
iii. Salaries to staff	: Rs.
iv. Allowances to staff	: Rs.
v. Bonus to staff	: Rs.
vi. Provident fund to staff	: Rs.
vii. Gratuity to staff	: Rs.
viii. Allowances to members	: Rs.
ix Traveling expenses	: Rs.
x. Rent of building and repairing of building	: Rs.

xi. Lighting charges and repairing charges : Rs.

xii. Postage, telegram, telephone charges: Rs.

xiii. Audit fees and other fees : Rs.

xiv. Stationery, printing, advertisement etc. : Rs.

xv. Draft commission : Rs.

xvi. Donation : Rs.

xvii. Any other (specify) : Rs.

17. Net profit/loss if any : Rs.

18. Distribution of profit

i. Special reserve fund : Rs.

ii. Bad debt reserve fund : Rs.

iii. Dividend to members : Rs.

iv. Building fund : Rs.

v. Bank saving : Rs.

vi. Any other : Rs.

18. Management and organisation

A. Secretary :

i. Whether the secretary is for a single society or for group of societies?

---

ii. If for a group, for how many societies?

---

iii. Educational qualifications?

---

iv. Special training in co-operation (months)

---

v. Experience of working as secretary (years)

---

vi. Where secretary resides : At H.Q. village / away from H.Q. village?

---

vii. Visits per week to society,if not staying in the village.

B. Managing committee :

Sr. No.	Name of the members	Position	Age years	Education	Experience in the management committee	Special training in co-operation if any
1.						

C. Do you think that the managing committee is quite cohesive? Yes/No

D. If not, do the differences coup up while passing any resolution? Yes/No

E. If yes, how frequently?

Always/Occassionaly

F. Managing committee meetings

i. How many meeting were held last year? ----------

ii. How many resolutions were passed ----------

iii. How many were passed unanimously ----------

iv. How many meetings were attended by the Chairman himself?

19. General questions to the secretary.

i. What is observation regarding working of the society good / satisfactory/ unsatisfactory

ii. If good what are the reasons for success?

a.
b.

If unsatisfactory, what are the reasons? ----------

iv. What are the difficulties of the society in respect of :

Sr. No.	Item	Difficulties	Suggestions for improvement
1.	Area of operation		
2.	Capital		
3.	Credit		
4.	Transport, communication		
5.	Secretary		
6.	Response from members		

7. Managing committee
8. Availability of feed and fodder
9. Income
10. Commission for milk collection
11. Govt. milk schemes
12. Subsidy

---

20. Average price for milk paid to milk producer (buffalo and cow milk)

Month 1989-90
January
.
.
.
December

---

22. i. What is the commission given by the government for collecting milk? Paise/litre

ii. Is this rate of commission sufficient to cover all the expenses of the society? Yes/No.

iii. If no, how do you manage?

---

iv. Do you charge any commission to milk suppliers? Yes/No
If yes, what is the rate?
Paise/litre

23. What are the problems faced by the society regarding :

i. Quality of milk supplied by the milk producers.

---

ii. Average price received from the Government milk scheme.

---

iii. Collection of milk by the Government milk scheme (Timely transport, supply of ice etc.)

---

iv. Any other problems?

---

v. What is the general impact of the society on the milk producers?

---

23. Progress of the society for last three years (including the year 1988-89)

Year	Members	Total annual milk collection (Lit.) Cow/Buffalo	Share capital (Rs.)	Reserve Fund & other fund(Rs.)	Deposits (Rs.)	Borrowings (Rs.)	Loan advanced		Overdues		Total turnover of the society	Net profit (Rs.)	Net loss (Rs.)
							S.T. (Rs.)	M.T. (Rs.)	S.T. (Rs.)	M.T. (Rs.)			
1986-87													
1987-88													
1988-89													

Annexure - II

QUESTIONNAIRE FOR MEMBERS

1. Name of the member

2. Name of the society

3. Village

4. Tehsil

5. Age

6. Education

7. Type of farmer
   a. Landless
   b. Marginal
   c. Small
   d. Others

8. Occupation
   a. Main
   b. Subsidary

9. Family type
   a. Joint family
   b. Nucleated
   c. No. of family members

10. Total number of animals possesed by the member

	No.	Present value (Rs.)
i. Cows		
a. Indigenous/pure		
b. cross bred		
ii. Buffaloes		
iii. Goat		
iv. Others		

11. Land holding Area (ha)

   a. Irrigated
   b. Dry land
   c. Waste land
   d. Grass land

   Total Area

12. Cropping pattern

Season	Name of crop	Area (ha)	Yield (Qt.)	Value (Rs.)
a. Kharif	i)			
	ii)			
b. Rabi	i)			
	ii)			
c. Summer	i)			
	ii)			
d) Annual				
e) Biennial				
f) Perrenial				

13. Average milk produced per day (liters) - cow ___
Buffaloes ___
Goat ___

14. Average milk sold _____ liter/day

Milk yield in liters (annual) _____

Cow		Buffalo	Goat	Others
Indigenous	Crossbred			

15. Milk kept for domestic use — Qt. (liters) — Value (Rs.)

16. Milk sold and amount received (monthwise)

Month	Milk sold (liter)	Price received (Rs.)
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		
January		
February		

17. Total quantity of dung/F.Y.M. produced per year and their market value

Kg _____ Rs. _____

18. Expenditure incurred on milk production
a) Cost of feed purchased for milch animal only.

Type	Quantity (kg)	Value (Rs.)
1. Fodder		
2. Green fodder		
3. Concentrates		

a) Transport from byre to society

b) Medicine

c) Labour

d) Miscellaneous

19. Investment in the dairy enterprise

Sr. No.	Item of investment	Amount(Rs.)
1.		
2.		

20. Credit borrowed from the society/ other agencies.

Type of credit	Purpose	Amount (RS.)	Rate of interest
a) Short-term			
b) Medium-term			
c) Long-term			

General questions :-

Q.1 What is your opinion about dairy as an enterprise ?

Q.2 What are the problems faced by you ?

Q3 : Do you think that the present price for milk given by the societies is reasonable ?

Yes/No.
If No what should be the price of milk to be fixed by the Government ?

Q4: What is your opinion about the functioning of the Dairy Co-operative society ?

Q5: What are the weakness/drawbacks ?

Q6: What are your suggestions to inprove the working of the society ?

Q7: Reaction of milk suppliers about the society in respect of

i) Milk testing
ii) Milk measurement
iii) Rejection of milk
iv) Milk spoilage through society
v) Milk prices
vi) Milk handling by the society

Vita

VITA

Sanjay N. Jagtap

Candidate for the degree

of

Master of Science (Agriculture)

Title of Thesis	: An economic evaluation of dairy co-operative societies in Satara District.
Major field	: Agricullttural Economics
Biographical information Personal data	: Born at Satara on 16th day of October, 1967; son of Shri Nivrutti L. Jagtap, District - Satara.
Educational qualifications	: Attended Secondary School in St. Paul School, Satara and Higher Secondary School in Science College, Satara. Received the Bachelor's degree in Agriculture from College of Agriculture, Dapoli with First Class from Konkan Krishi Vidyapeeth, Dapoli in May 1989.
Co-curricular activities	: Represented as University Captain in the Inter-University Table-Tennis Tournaments held at Indore (1987), Jamnagar (1990) and Ahmedabad (1991). Represented college chess team twice. Completed N.C.C. 'C' certificate (senior cadre).