A STUDY ON ANALYSIS OF MILK YIELD AND DISPOSAL IN MADURAI DISTRICT

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1. Introduction

In India, the need for promotion of dairy industry arises due to several considerations such as low per capital, availability of milk, prevalence of large scale unemployment. Various dairy development programmes were started to ensure supply of adequate quantity of milk at reasonable price to urban consumers and to provide viable subsidiary occupation to unemployed rural poor so as to raise their income earning capacity

The Kaira District Cooperative Milk Producers' Union Limited, popularly known as AMUL (Anand Milk Union Limited), was the first dairy cooperative in India. Origin of dairy cooperatives perhaps started with the formation of the Madras Cooperative Milk Supply Union in 1926 almost 20 years before the first dairy cooperative society was registered in the Kaira district in Gujarat[1]. In Madurai district, a milk supply union had been started in 1938 and it was converted into an elaborate milk project in 1967 by the Government of Tamil Nadu with financial assistance from the United Nations International Children's Emergency Fund (UNICEF)[2]. When the entire state of Tamil Nadu came under the effect of the Anand pattern, the Union was renamed as Madurai District Cooperative Milk Producers' Union Limited with effect from January 1, 1983.

2. Statement of the problem

The bulk of Indian rural population consists of small and marginal farmers and the landless agricultural labourers who mainly depend on agriculture for their livelihood. Therefore, some economically viable and feasible programmes are required to be formulated and implemented to bring about desirable improvements in the socio-economic status of the rural poor. Dairy development is the main subsidiary occupation directly related to agriculture. The Governments of different States have given emphasis on dairy development to generate the additional income and started government milk schemes. Cooperative dairy development was taken on priority basis and it was spread in different states of the country. Now these cooperative dairies are self-sufficient and play a vital role in rural economy of our country, especially the small and marginal farmers are benefitted due to development of dairy cooperatives. Hence, an attempt is made to study about the socio-economic impact of members, milk yield and disposal pattern of members of dairy cooperative societies, and so on. So, the title "**A Study on Analysis of Milk Yield and Disposal in Madurai District**"" is undertaken for the current research.

3. Review of literature

Ranjit Kumar and A.K. Sharma[3] carried out a case study on the "Impact of Dairy Cooperatives on the Rural Economy in Nalanda District". In this case study he analyzed the socio-economic profile of households and the impact of dairy cooperatives. The impact was ascertained in terms of important economic parameters, such as investment pattern, productivity of animals, milk production, market surplus and income from dairy farming.

Subhash Chand J.P. Dhaka and Parameshwar K. Dixit[4] in an article "Economic of Milk Production: Kurukshetra, Haryana" studied about the various aspects of bovine rearing, namely cost of feeding, expenditure on human labour, milk yield, prices of inputs and outputs and miscellaneous expenses. It

was found that cost of milk production by and large remained lower on large farms as compared to the small farms.

A.K. Koshta and M.R. Chandrakar[5] made a study on "Economics of Production and Disposal of Fluid Milk by Members and Non-members of Milk Cooperative Societies". This study indicates the distribution pattern of milch stock animals, the productivity of milch stock animals, operational cost and returns of milch stock animals and the distribution pattern of fluid milk.

D.S. Dhillon[6] in his article tilted "IRDP in Punjab: An Evaluative Study on Milch Animal Scheme" has analyzed the personal characteristics, material possessions and reactions of the beneficiaries, procurement of the milch animals, procedural lacunae in getting benefit from the programme, the extent of coordination between the IRDA and other departments while implementing the programme.

J.P. Srivastava and Rajiv Rai[7] analyzed the "Socio-economic Transformation through Cooperatives". They have described the various changes in the socio-economic behaviour of members, such as occupation, land holdings, education, house type, family size, training, employment in one's own field, social participation, and participation in raising funds.

4. **Scope of the study**

The largest dairy in the southern part of Tamil Nadu is the Madurai District Milk Producers' Union Limited. This is the only surviving dairy of the four mega dairies established across the country in 1967 with the UNICEF (United Nations International Children's Emergency Fund) aid. The Madurai Union covers two districts viz. Madurai and Theni. Madurai district consists of five teams and Theni district consists of three teams. Since, the researcher has been the resident of Madurai district, the scope of the study has been restricted to Madurai district only covering all five teams coming under this district namely Chellampatti, Melur, Peraiyur, Usilampatti, and Vadipatti.

5. **Objectives of the study**

The following are the main objectives of the study.

a) To study the role and need for dairying in rural development and to trace the history of dairy development and growth of dairy cooperative societies in India and Tamil Nadu in general and Madurai district in particular.
b) To estimate the milk yield and disposal pattern by the members of Dairy Cooperative Societies in Madurai District.
c) To analyse future plans of members in dairy forming
d) To summarize findings and suggestion.

6. **Area and period of the study**

The Madurai District Milk Producers' Union Limited covers two areas namely Madurai district and Theni district. Madurai Union collects milk from both the districts. Madurai district consists more number of teams i.e. five teams when compared to Theni district which has three teams. Hence the researcher has chosen the Madurai district as the area of the study for the current research work. The study was conducted during the period from January 2010 to June 2010 for primary data collection. Secondary data were collected for a period of 12 years from 1998-99 to 2009-10.

7. **Hypotheses**

The following hypotheses are tested in this study:

7.1 There is no significant relationship between the literacy of members and their level of attitude towards Dairy Cooperative Societies.

7.2 There is no significant relationship between the dairying occupation of members and their level of attitude towards Dairy Cooperative Societies.

7.3 There is no significant relationship between the experience of members and their level of attitude towards Dairy Cooperative Societies.

8. Methodology

The study is based on both primary and secondary data. The primary data were collected through personal interview using a well-structured interview schedule. The secondary data collected from unpublished reports of the office of the dairying, office of the animal husbandry, Institute of Co-operative Management, Madurai were also referred. In addition, articles and reports were referred from reputed journals and websites.

Madurai district consists of five teams of milk producing cooperative societies. Primary data was collected from the randomly selected members of dairy cooperative societies from all the five teams (i.e. taluks) situated in rural part of Madurai district. Since the members in the societies are large, random sampling technique was adopted for selecting the sample respondents. The number of sample members selected in each team is given in Table 8.1

TABLE – 8.1

Team-wise Selection of Sample Respondents

Sl. No.	Team	No. of DCS		No. of Members	
		Registered	Sample (10%)	Enrolled	Sample (1%)
1	Chellampatti	130	13	7457	75
2	Melur	62	6	4159	42
3	Peraiyur	184	18	13403	134
4	Usilampatti	111	11	5977	60
5	Vadipatti	105	11	7411	74
	Total	**592**	**59**	**38407**	**385**

Source: Madurai Dairy.

The researcher interviewed one per cent of member from a total of 38407 as sample respondents by adopting random sampling method. Thus, a sample of 385 members was drawn from five teams of Dairy Cooperative Societies in Madurai district for the study.

9. Limitations of the study

The following are the important limitations of the study:

a) Madurai Dairy controls the Dairy Cooperative Societies functioning at Madurai and Theni Districts. One of the main limitation of the study is it does not cover the households producing milk in Theni district.

b) Another limitation of the study is most of the respondents in study area are illiterate and they do not maintain proper accounts regarding the milk yield and disposal which are retrieved only from their memory.

10. Analysis of milk yield, disposal of sample members

This section is purely based on the opinions of members of Madurai Dairy Cooperative Societies. Primary data collected for this purpose have been extensively used. This section has been divided into two sections, viz. i) Milk Yield; and ii) Disposal Pattern of Milk.

10.1 Milk yield:

In order to analyze the milk yield, it is necessary to know about the average milk, production, consumption and disposal. Hence, the researcher attempted to study these facts. It shown in Table 10.1

TABLE – 10.1
Average Milk Production, Consumption, and Disposal

(Litres per day)

Team	Production	Home Consumption	Sold	% Share of Milk Sold
Chellampatti	19.9	1.8	18.1	90.95
Melur	16.5	1.1	15.4	93.33
Peraiyur	16.0	1.1	14.9	93.13
Usilampatti	18.7	1.6	17.1	91.44
Vadipatti	17.0	1.2	15.8	92.94
All	**17.0**	**1.6**	15.4	90.59

From Table 10.1 it is noted that the highest average production was made by the Chellampatti team (19.9 litres per day) and the lowest by Peraiyur team (16 litres per day).

10.2 Disposal pattern of milk:

Whether the entire milk was disposed to the Dairy Cooperative Societies or not has been attempted. The result of the study was shown in Table 10.2

TABLE – 10.2
Selling Milk to District Cooperative Societies

Response	Team-wise No. of Respondents					All
	Chellampatti	Melur	Peraiyur	Usilampatti	Vadipatti	
Yes	71 (95)	42 (100)	132 (99)	59 (98)	73 (99)	377 (98)
No	4 (5)	-	2 (1)	1 (2)	1 (1)	8 (2)
Total	**75**	**42**	**134**	**60**	**74**	**385**

(Figures in parenthesis indicate percentage)

Table 10.2 explains that almost all the respondents (100%) in the Melur team are selling their surplus milk to the Dairy Cooperative Society. In other teams, around 95 to 99 per cent of respondents sell the surplus milk to the Dairy Cooperative Societies.

In total, 98 per cent comprising 377 respondents sell the rest of the milk to the Dairy Cooperative Societies and 2 per cent do not sell their milk to the Dairy Cooperative Societies.

11. Analysis of attitude of members towards dairy cooperative societies

The researcher, in this chapter makes an assessment of members' opinion towards the benefits enjoyed from the Dairy Cooperative Societies in Madurai District. The term 'Attitude' means 'settled behaviour'. The level of attitude will indicate the performance of various benefits enjoyed by the members. A five-point scale has been devised for measuring the attitude of members towards the benefits from the Dairy Cooperative Societies with the help of scale developed by Likert.

11.1 Literacy and Level of Attitude:

The literacy of the members of Dairy Cooperative Societies makes them aware of benefits of the Dairy Cooperative Societies and the changes introduced by the societies as well as by the government from time to time with regard to price, quality checking, provision of artificial insemination, settlement of accounts, etc. Hence, literacy and level of attitude are analyzed together. Table 11.1 shows the literacy and level of attitude of members.

TABLE – 11.1

Literacy Vs. Level of Attitude of Members

Literacy	Level of Attitude						Total	
	Low		Medium		High			
	No.	%	No.	%	No.	%	No.	%
Illiterate	4	6.4	49	79.0	9	14.6	**62**	**100.0**
Can Read & Write	6	4.8	107	85.6	12	9.6	**125**	**100.0**
Primary Level	11	8.6	102	79.0	16	12.4	**129**	**100.0**
High School Level	4	6.9	42	72.4	12	20.7	**58**	**100.0**
Higher Sec. Level	1	12.5	6	75.0	1	12.5	**8**	**100.0**
UG Level	-	-	3	100.0	-	-	**3**	**100.0**
Total	26	6.8	309	80.2	50	13.0	**385**	**100.0**

Out of 62 illiterate members, 9 (14.6%) have high level attitude, 49 (79%) have medium level attitude, and 4 (6.4%) have low level attitude. In the category of 'can read and write', out of 125 members, 9.6 per cent constitute high level, 85.6 constitute medium level, and 4.8 per cent constitute low level attitude members. In the case of primary level literacy, 12.4 per cent belongs to high level, 79 per cent comes under medium level, and 8.6 belongs to low level attitude group. The high level attitude members are more in high school level category (20.7%) when compared to other literacy level. All the 3 members in UG level category have medium level attitude.

The researcher has attempted to ascertain whether any significant relationship exists between level of literacy and level of attitude towards Dairy Cooperative Societies. Chi-square test has been adopted to test the following null hypothesis:

Null Hypothesis: "There is no significant relationship between the literacy of members and their level of attitude towards Dairy Cooperative Societies".

The chi-square test results are given as follows

Calculated Chi-square Value **: 7.298**
Table Value at 5% Level of Significance **: 18.307**
Degree of Freedom **: 10**
Hypothesis Result **: Accepted**

Since the calculated values are less than the table values, the null hypothesis is accepted in the case of members of Dairy Cooperative Societies. The inference is that there is no significant relationship between the literacy of members and their level of attitude towards Dairy Cooperative Societies.

11.2 Dairying Occupation and Level of Attitude:

The nature of occupation to a greater extent decides the earning capacity of people. For earning more, most of the people are doing dairying as secondary occupation. Hence, the researcher has taken the dairying occupation as one of the variables influencing the level of attitude. It is explained in Table 11.2.

TABLE – 11.2

Dairying Occupation Vs. Level of Attitude of Members

Dairying Occupation	Level of Attitude						Total	
	Low		Medium		High			
	No.	%	No.	%	No.	%	No.	%
Main	11	5.5	167	83.5	22	11.0	**200**	**100.0**
Secondary	15	8.1	142	76.8	28	15.1	**185**	**100.0**
Total	26	6.8	309	80.2	50	13.0	**385**	**100.0**

Table 11.2 exhibits that out of 385 sample members, 200 members are doing dairying as their main occupation. Of which, 22 (11%) members belong to high level attitude, 167 (83.5%) belong to medium level attitude, and 11 (5.5%) come under low level attitude category. Regarding secondary occupation, 28 members

constituting 15.1 per cent have high level, 142 members constituting 76.8 per cent medium level, and 15 members constituting 8.1 per cent have low level attitude.

From Table 11.2 it is clear that the percentage of members having high level attitude is more in secondary occupation category than the main dairying occupation category.

At this juncture, the researcher has attempted to ascertain whether any significant relationship exists between occupation and level of attitude towards Dairy Cooperative Societies. Chi-square test has been used to test the following null hypothesis:

Null Hypothesis: "There is no significant relationship between the dairying occupation of members and their level of attitude towards Dairy Cooperative Societies".

The chi-square test reveals the following result:

Calculated Chi-square Value **: 2.778**
Table Value at 5% Level of Significance **: 5.991**
Degree of Freedom **: 2**
Hypothesis Result **: Accepted**

As the calculated value is lower than the table value, the null hypothesis is accepted. Hence, it is said that there is no significant relationship between the dairying occupation of members and their level of attitude towards Dairy Cooperative Societies".

11.3 Experience and Level of Attitude:

Normally, the experienced member can know more about the benefits of Dairy Cooperative Societies than the inexperienced one. So, the researcher has taken experience as the last variable towards analyzing the level of attitude of members. Table 11.3 point out the experience and level of attitude of members.

TABLE – 11.3
EXPERIENCE Vs. Level of Attitude of Members

Experience	Level of Attitude						Total	
	Low		Medium		High			
	No.	%	No.	%	No.	%	No.	%
Less than 5 Years	2	3.3	47	78.4	11	18.3	**60**	**100.0**
5 to 10 Years	7	8.3	68	81.0	9	10.7	**84**	**100.0**
10 to 15 Years	11	8.8	96	76.8	18	14.4	**125**	**100.0**
Above 15 Years	6	5.1	98	84.5	12	10.4	**116**	**100.0**
Total	26	6.8	309	80.2	50	13.0	**385**	**100.0**

It is understood from Table 11.3 that the percentage of high level attitude is more in 'less than 5 years' category when compared to other categories and also in particular reference to 'above 15 years' category. It is 18.3 per cent in 'less than 5 years' category and 10.4 per cent in 'above 15 years' category.

Regarding the medium level attitude, the 'above 15 years' category, accounted for more percentage when compared to other categories.

The researcher has embarked upon ascertaining the relationship between experience and level of attitude towards Dairy Cooperative Societies. For this purpose, chi-square test is used to test the following null hypothesis:

Null Hypothesis: "There is no significant relationship between the experience of members and their level of attitude towards Dairy Cooperative Societies".

Chi-square test results at 5% significance level are given:

Calculated Chi-square Value **: 5.502**
Table Value at 5% Level of Significance **: 12.592**
Degree of Freedom **: 6**
Hypothesis Result **: Accepted**

As the calculated value is less than the table value, the null hypothesis is accepted and it is concluded that there is no significant relationship between the experience of members and their level of attitude towards Dairy Cooperative Societies.

12. Findings of the study

* It is noted that the highest average production was made by the Chellampatti team (19.9 litres per day) and the lowest by Peraiyur team (16 litres per day).

* It is noted that almost all the respondents (100%) in the Melur team are selling their surplus milk to the Dairy Cooperative Society. In other teams, around 95 to 99 per cent of respondents sell the surplus milk to the Dairy Cooperative Societies. In total, 98 per cent comprising 377 respondents sell the rest of the milk to the Dairy Cooperative Societies and 2 per cent do not sell their milk to the Dairy Cooperative Societies.

* The high level attitude members are more in high school level category (20.7%) when compared to other literacy level. Whether any significant relationship exists between the level of literacy and attitude towards Dairy Cooperative Societies has been attempted. The result indicates that there is no significant relationship between literacy of members and their level of attitude towards Dairy Cooperative Societies.

* It is clear from the study that the percentage of members having high level attitude is more in secondary occupation category than the main dairying occupation category. The null hypothesis framed "there is no significant relationship between the dairying occupation of members and their level of attitude towards Dairy Cooperative Societies" for this purpose is accepted.

* It is evident that the percentage of high level attitude is more in 'less than 5 years' category when compared to other categories. Chi-square test is used to test the framed null hypothesis. The framed null hypothesis is accepted in the study.

13. Suggestions

Now-a-days, Dairy Cooperative Societies are not in active position. They should take steps to enroll more number of members to meet the demands of the country's requirements. Provision of credit to the members can be arranged by the dairy societies for meeting the demands of dairy farmers at concessional rate of interest. Green fodders should be supplied at concessional rates to the members for improving the milk production. To prevent diseases to milch animals, the Dairy Cooperative Societies should arrange for a periodical check-up for animals at free of cost. The method of measuring the quantity of milk, testing it for fat and SNF followed by the societies are often questionable which compel the milk producers to sell the milk to the local traders. It is suggested that this practice should be withdrawn. Necessary measures should be taken to collect the milk from the producers at their doorsteps and also attract them by giving advance money as and when they need. In order to function and manage dairy societies effectively, the representatives from members can be elected through election for the benefit of members.

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