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## ECONOMIC ANALYSIS OF DAIRY CO-OPERATIVES - A CASE STUDY

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### ABSTRACT: -

**C**ooperare" – is the Latin word which means working together for a common cause. According to Bowen cooperation is the universal instrument of creation. It is a form of economic organization based on certain human values.



**KEYWORDS:** *Economic Analysis , Dairy Cooperatives , Statistical Information .*

### 1. INTRODUCTION :

Milk is the most widely accepted and used animal product in India. Milk is precious natural product from cow, buffalo and goat. It is mostly available in rural

and urban areas fulfilling the basic and necessary needs of needy people, specially poverty people. As per the Statistical Information of Dairy Development in India (SIDDI) 2016 milk production is more than 84 million metric tonnes and 10.5 million liters in a day are marketed by 70 milk years. The average milk procurement in a day may be 14.65 million liters during flash (October-February) period and 12.16 million liters during lean (March- August) period.

Dairy cooperatives play an important role in production and marketing of milk and milk products. Dairy cooperatives account for the major share of processed liquid milk marketed in the country by 192 Milk Producers Cooperatives Unions which federated 22 State Cooperative Milk Federation with 1.17.575 Primary Milk Producers Cooperative Societies. The business of dairy generates regular daily income both rural and semi-urban population very specially to women folk by providing self - employment and improving the quality of their life.

### 2. DAIRY COOPERATIVES IN INDIA

Last four decades, India has made tremendous progress in food production. The contribution of agriculture to the Gross Domestic Product (GDP) has declined steadily. Dairy products account for 70 percent of the output of livestock sector and also provide employment around 75 million women and only 15 million men. The Dairy Development Board (NDDB) programmes seek to strengthen the functioning of dairy cooperatives. Also, NDDB supports the development of dairy cooperatives by providing them financial assistance and technical expertise, ensuring a better life for Indian farmers.

### 3. GENESIS OF OPERATION FLOOD

The Operation Flood programme was formulated by the National Dairy Development Board (NDDB) which was set up in 1965 and the suggestion of the late Shri. Lal Bahadur Shastri, the Prime Minister of India. The programme was launched on 1st July, 1970 by the Indian Dairy Corporation (IDC) which was a Government of India

corporation established in 1970 to serve as a finance and promotion of the programme. Operation Flood was originally conceived as a milk marketing project aimed at enabling the modern dairies to capture commanding shares of the liquid milk markets in India's four metropolitan cities of Bombay, Calcutta, Delhi and Madras. This goal was to be achieved by creating a 'virtual flood' of milk in the rural milk sheds of these four metropolitan cities and channeling the flood to the liquid milk market of these cities through a producer-owned and controlled cooperative system of milk procurement, processing and its marketing. Eventually, the goal of Operation Flood was broadened to include improvements in the standards of dairy farming by introduction of improved methods of breeding, feeding, health care and management of dairy animals backed up by necessary training and extension services. The main objectives of India's Dairy Development Policy since 1970.

#### 4. DEFINITION OF THE PROBLEM

Milk is one of the most important items of human diet and it is an important source of income of a large number of people including poor farmers. Since these farmers produce milk in very small quantities, and they face some problems in selling it at reasonable prices. But dairy cooperatives provide a suitable solution to this problem. Dairy cooperatives not only serve as channel for marketing of milk but also serve as centers of supply inputs and information for dairy farmers. Hence, the present study is undertaken on the economic analysis of Karaikal Cooperative Milk Producers Union Limited, Karaikal, Puducherry Union Territory.

**Table 1**  
**ACHIEVEMENTS OF OPERATION FLOOD**

S. No.	Features	Operation Flood		
		Phase-I	Phase-II	Phase-III
1.	Date when started	July I, 2011	October 2011	April I, 2011
2.	Date when concluded	March 2012	March, 2012	March 2012
3.	Investment (Rs. crore)	116.6	277.2	1303.1
4.	No. of Federations/Ape Milk Unions setup No. of Milk She discovered	10	18	22
5.	No. of DCSs setup ('000)	39	136	170
6.	No. of members (lakh)	13.3	345	72.5
7.	Average Milk Procurement (mkgpd)	17.5	36.3	92.63
8.	Liquid Milk Marketing (IIPd)	2.56	5.78	10.99
9.	Liquid Milk Marketing (IIPd)	27.9	50.1	100.2
10.	Processing Capacity 1. Rural Dairies (IIPd) 2. Metro Dairies (IIPd)	35.9 29.0	87.8 35.0	80.9 38.8
11.	Milk. Drying Capacity (MTPD)	261	507.5	842
12.	Technical Inputs 1. No. of AI centers ('000) 2. No. of AI done at end (lakh 1 year) 3. Cattle feed capacity ('000 MTPD)	4.9 8.2 1.7	7.5 13.3 3.3	16.8 39.4 4.9

(MKGPD -. Million Kilo Gram Per Day, LMMPD - Liquid Milk Marketing per day,  
MTPD-Metric Tonne Per day)

Sources : Quarterly & Monthly Progress Reports on Operation Flood, NDDB, Anand, 2011-2012

#### 5. REGISTRATION AND COMMENCEMENT

The Karaikal Cooperative Milk Supply Society was registered and started on 5th April 1955 and its share capital was Rs.2710 contributed by 128 members. The Karaikal Cooperative Milk Supply Society's name was changed on 28.07.2003 i.e., The Karaikal Cooperative Milk Producers Union Limited P-8

## 6. AREA OF OPERATION

The area of operation of the union confined to six communes namely, Kottucherry, Karaikal, T.R.Pattinam, Neravy, Thirunallar and Nedungadu primaries.

## 7. KARAİKAL COOPERATIVE MILK PRODUCERS UNION

The Karaikal Cooperative Milk Producers' Union was started by K.M.Gurusamy Pillai who was a Prominent Citizen in Karaikal. He was the founder and President of the society. The society had set up its office and milking yard in a plant of land owned by Sri Kailasanathar Temple. Ten years later, the office of the society was shifted to a rented building in main bazar. There was a slow expansion in the activities of the society.

In 1967, the society introduced a new scheme for the supply of cattle feed to the members. This was done in order to help the members to obtain an uninterrupted supply of cattle feed at fair price and to get assured yield in quality of milk. In the subsequent years, the society arranged to open coffee bars in different places in Karaikal town for selling hot coffee and milk.

These coffee bars were used to dispose surplus milk available. The society also producing and distributing curd, ghee and milk. In 1972-1973 the society introduced a loan scheme with the object of increasing the milk production. Under this scheme the society lending its owned funds to the members for the purpose of buying Milch animals. As a result, there was a considerable increase in the volume of sale. This scheme continued till 1980 and during the entire period the society gradually expanded its operations.

After the introduction of loan scheme the society arranged to established a chilling plant with the capacity of 2000 liters in order to process the large quantity of milk and distribute its subsequently. The plant started its operation in August 1975. In 1975, the society constructed its own building in Karaikal Koilpattu, two Kilometers away from the Karaikal town. A new chilling plant with the capacity of 4,000 liters was setup in the same building. In 1983, the society installed a new can cooler of capacity of 1000 liters. The Karaikal Cooperative Milk Producers Union undertakes procurement and distribution of milk with in a limited are an operation.

## 8. MEMBERSHIP

If the following condition are fulfilled a person is eligible to became membership in the union.

1. He should be above 18 years of age and competent to enter into a contract under the Indian Contract Act.
2. For Procuring and supplying of milk produced by Milch animals owned by a person who is bonafied.
3. He / She should be are silent of the area under the jurisdiction of the union.
4. Every members hall take at least one share, a members hall not takemorethan50shares. The value of share Rs.10/-and every member should pay an entrance fee of Rs.1/- for each share.
5. Now the union admits only primary societies as its members. The share value is Rs.1000/-.
6. The members are categorized into two types as producer members and consumer members.

## 9. PRODUCER MEMBER

If a member under takes to supply to the union continuously and who lives with in the area under the jurisdiction of the union is called a producer member. A producer members is also eligible to contest for the election to the board of Directors and to vote during the shareholders meeting.

## 10. CONSUMER MEMBER

A person is regarded as a consumer if he happens to live in the area jurisdiction of the union and who purchase milk regularly. The consumer member has no voting rights and is not eligible to contest in the election of the board. The practice of admitting consumer member is discontinued after their organization of the structure and formation of the producer's societies.

**Table 3**  
**PROCUREMENT PRICE OF MILK**

Year	Rs.
2006-2007	10.50
2007-2008	10.50
2008-2009	11.00
2009-2010	10.50
2010-2011	12.50
2011-2012	13.00
2012-2013	14.00
2013-2014	18.00
2014-2015	18.00
2015-2016	18.00

(Source: Audit report of the union).

The above table reveals that the procurement price for the past ten years. In 2006-2007 the price was Rs.10.50 paise it has increased to Rs.10.50 paise in 2009-2010. Subsequently it has fixed at Rs.18.00 paise in 2013-2014 and 2015-2016. Remaining six years (2006-2013) the milk union fixed alternate price Rs.10.50 to 14.00 paise for procurement of milk from the members.

## 11. PROCUREMENT

The procurement is determined by the availability of milk and the ability of the union to this available quantity. The second point that determines the procurement functions of the union is the capacity to handle the milk arrivals during the flush season.

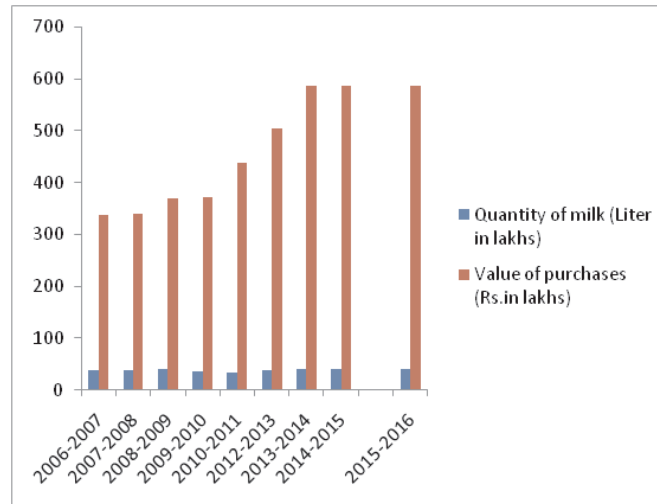
**Table 4**  
**QUANTITY AND VALUE OF PROCUREMENT OF MILK**

Year	Quantity of milk (Liter in lakhs)	Value of purchases (Rs.in lakhs)
2006-2007	38.77	337.77
2007-2008	39.11	339.85
2008-2009	40.08	370.15
2009-2010	35.47	372.48
2010-2011	35.14	439.29
2012-2013	38.96	506.54
2013-2014	41.91	586.85
2014-2015	41.91	586.85
2015-2016	41.91	586.85

(Source: Audit report of the union).

The above table reveals that the quantity of milk procured and the value of procurement. During the study period milk procurement was not constant. It has registered fluctuating position. The highest procurement was done in 2013-2014 (41.91 lakhs liter). The lowest procurement of milk was 35.14 lakhs liter in 2010-2011. The value of milk procurement shows up and down position. In 2010-2011 the value of procurement was R.s.372.48 lakhs. But in 2009-2010, the value of milk procurement was Rs.439.29 lakhs.

The below diagram gives the details



## 12. PROCESSING OF MILK

When animal milk producer offers his milk for sale at the collection centre of cooperative union animal sample is taken out from the milk to assess the fat content. The SNF content is measure don the spot with the help of animal lactometer. Subsequently fat percentage is estimated for each sample. Having recorder the fat per cent and lactometer readings the milk price is noted down with help of at wowaytable of milk price provided by the district milk producers union to each collection centre. When the farmers sell their producer at cooperative milk collection centre, the price of milk received by the mislinked to the fat and SNF content.

## 13. CHILLING OF MILK

Chilling is a common method of processing in which the milk is cooled at a temperature to maintain the quality of the milk as long as the temperature does not rise above 10 Celsius. The society has at present 3 chilling plants and cane cooler with capacity of 4000 liters, 1000 liters and 640 liters respectively. The milk is poured in to machine twice a day to prevent the spoil age of milk from curling. The chilling plan operation are attended by the plant operator.

The specific gravity of milk is taken as1028 have specific gravity of milk can be found out by Quinn or lactometers method. The sample to be tested is thoroughly mixed and brought to the temperature between 50-70 Fand is powered in a measuring cylinder and the lactometer is slowly and carefully lowered in milk until it floats. Itis allowed to remain in position for some times lac to meter should not touch the side of the cylinder. The reading is taken directly from the lactometer which is in level with the surface of milk. When the temperature is 60°F the lactometer reading is more. In that case and0.1, subtract 0.1for every raise/decrease respectively. In case of adulteration the specific gravity will below, normally, the specify gravity will be around 2.5or2.6.

## 14. DISTRIBUTION OF MILK

The union arranges to sell their milk throughout Karaikal town by employing vendors. The seven vendors take milk in sealed cane on their own bicycle and sell the milk against Coup on or cash. Preference is given to consumer members who hold coup on paying cash in advance the value in cash. Coupon are available for purchases of 250ml, 500ml, and 1 liter of milk and are issued in bunches of 30.

A consumer member is free to purchase the required numbers of coupon. The coupon is valid for women thus from the date of purchases. However, if additional milk is demanded the vendors make another trip to the milk union for collect and distribute the extra quantity.

**Table 5**  
**MARKETING OF MILK IN DIFFERENT PRICE**

Year	Selling Price		
	Cash Rs.P.	Coupon Rs.P.	Special Order Rs.P.
2006-2007	12.00	12.00	13.50
2007-2008	12.00	12.00	13.50
2008-2009	12.00	12.00	13.50
2009-2010	14.00	14.00	16.00
2010-2011	17.50	17.50	19.00
2011-2012	17.50	17.50	19.00
2012-2013	23.00	23.00	25.00
2013-2014	26.00	26.00	27.50
2014-2015	26.00	26.00	27.50
2015-2016	26.00	26.00	31.00

(Source: Audit report of the union).

The above table shows that the shows that the distribution of milk price by cash, coupon and special order. The price of the milk marketing by cash was Rs.12.00 paise, Rs.14.00 paise and 17.00, 23.00, 26.00 per liters. Through coupon was Rs.12.00 paise, Rs.14.00 paise and Rs.17.50, 23.00, 26.00. But, through special order the marketing price was little high. i.e. Rs.13.50 paise, Rs.16.00 and Rs.19.00, 25.00, 27.50 paise.

## 15. DISTRIBUTION SCHEDULE

The arrangement for distribution is an integral part of the production function of the milk union. Because of the limited time available, for the scheduling of distribution timings has to be made very carefully and loading and dispatching of vehicles should be worked out carefully that the dispatch of vehicles is made in time. An elaborate schedule has been prepared by the society for distribution and this is exhibited in the chilling plant itself. As per the schedule, vendors list allotted. Distribution is made at 6 o'clock in the morning and 2 o'clock in the afternoon. They have to complete their distribution in allotted areas covering a certain number of street and return to the plant. These vendors have to put their signature at the time of their departure and arrivals in the register kept for that purpose. A plant supervisor is in charge to maintaining the register.

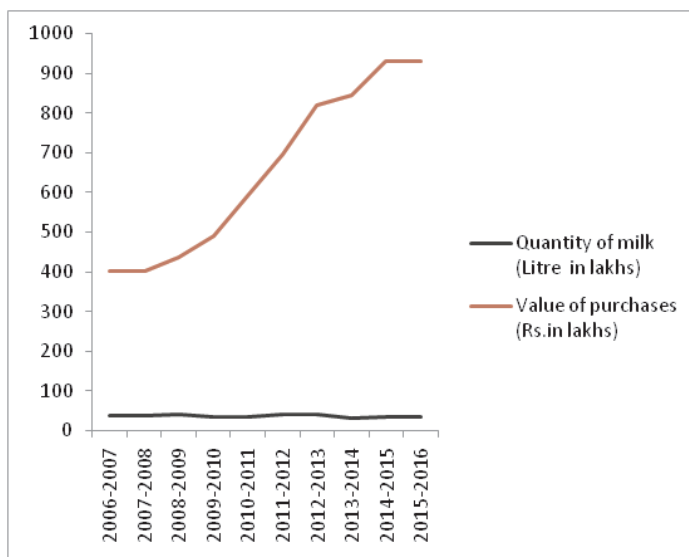
**Table 6**  
**DETAILS OF MILK MARKETING WITH QUANTITY AND VALUE**

Year	Quantity of milk (Litre in lakhs)	Value of purchases (Rs.in lakhs)
2006-2007	37.99	403.99
2007-2008	38.11	402.85
2008-2009	38.78	438.18
2009-2010	35.04	490.63
2010-2011	33.77	591.00
2011-2012	39.77	696.69
2012-2013	39.88	817.63
2013-2014	32.41	842.88
2014-2015	35.72	928.87
2015-2016	35.72	928.87

(Source: Audit report of the union).

The table above shows that the position of milk distribution. It is observed that distribution of milk vary from year to year 39.88 lakhs liter of milk distributed in 2011-2012 with value of Rs.817.63 lakhs. In 2013-2014 Rs.35.72 lakhs liters of milk distributed with value of Rs.928.87 lakhs. It is also observed that nearly 90 percent of procured milk distributed to the customers.

The below graph gives the details.



**16. CONCLUSION**

The dairy sector in India has shown remarkable development in the past decade and India has now become one of the largest producers of milk and value added milk products in the world. Dairying has proved beyond doubt that it acts as one of the tools aimed at alleviating the poverty and unemployment especially in the



rural are as in the rain fed and drought prone regions. If India has to emerge as an exporting country, it is imperative that we should develop proper production. Processing and marketing infrastructure, which is capable of meeting international quality requirements. A comprehensive strategy for producing quality and safe dairy products should be formulated with suitable legal backup.

The Karaikal Cooperative Milk Producers Union has been performing well since its inception. The volume of transactions was reduced yet it was able to earn profit. It has clear vision for the future to argue its business. It has a proposal to install a highly sophisticated plant for chilling the milk and to modernize its sale. It has to devise suitable effort to sustain it and enhance its business performances.