CHAPTER-IV

PRODUCTION AND MARKETING OF MILK

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4.6 Summary
4.1 Introduction

Indian economy is mainly based on agriculture as nearly 80 per cent of the populations are engaged directly in it. But agriculture alone is unable to provide necessary employment, income and creation of assets to the people. Hence, dairying constitutes an important activity of the rural population, mostly as a subsidiary occupation. India has had a rich tradition in dairying since the time of Lord Krishna. Dairying has been inherent in Indian culture, for centuries. In India more than 80 per cent of the cattle populations are in rural areas and about 76 per cent of the rural population is contributing towards milk production.

The production of milk is from the cattle population, particularly from cows and buffaloes. This also supports the weaker section as subsidiary occupation and also helps to earn additional income. The importance of its increased production has gained momentum now-a-days. The production of milk depends upon various factors as breed of cattle, care and the like. The climate also evidently seems to affect the quantity of production at times. This chapter attempts to study the various aspects relating to the production of milk in the selection study area.

Milk is a precious gift of nature to all living beings under the sun. It nourishes our health and tones up the immune system of the body. It is
produced mostly in rural areas and it is distributed to the ultimate consumers in urban areas though effective marketing system. The consumers expect good quality milk at a fair price regularly. The producers want to have more remunerative price for the milk they sell. Here the dairy co-operative play a major role in satisfying the milk producers as well as the consumers.

4.2 World Scenario of Dairy

The annual world trade in milk products (excluding intra-EU) amounts to 33 million tonnes, valued at US$ 10 billion. Barely 6 to 7 per cent of the world milk production is traded internationally. The bulk of the world dairy trade is in cheese, butter and powders. A growing shift towards cheese is expected in the near future. Two dynamic products with a substantial projected growth in the coming years are yoghurt and dessert.

The international dairy trade is dominated by four players - EU, New Zealand, Australia and USA - which together account for 85 per cent of all exports. New Zealand and Australia export as much as 80 and 50 per cent of their milk production respectively. The Asia-Pacific region has been and will remain a net milk importer in the foreseeable future. It accounts for the bulk of milk powder imports and half of the imports of condensed and evaporated milk. In contrast, most cheese
imports go from developing countries to developed countries such as Japan and the United States.

The dairy industry is regulated in most countries through various ways. Imports are commonly restricted, and exports frequently subsidized. High dairy price supports in many countries are put in place to stimulate production to the extent that subsidies for exports are necessitated to maintain domestic dairy programmers’.

4.2.1 Global Milk Production

Global milk production is forecast to reach 750 tonnes according to a new report published in the Food Outlook by United Nation’s Food and Agriculture Organization. This world represents an annual increase by 3 per cent largely due to increased production in Asia, Oceania and South America. In Asia, milk production is expected to record stray growth in India, China, Pakistan and Turkey mainly due to growing demand for dairy products. The total milk production is presented in the Table 4.1.
**TABLE 4.1**

GLOBAL MILK PRODUCTION 2002-2011

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Year</th>
<th>Production (million tones)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2003</td>
<td>615</td>
</tr>
<tr>
<td>2</td>
<td>2004</td>
<td>628</td>
</tr>
<tr>
<td>3</td>
<td>2005</td>
<td>647</td>
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<tr>
<td>4</td>
<td>2006</td>
<td>666</td>
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<tr>
<td>5</td>
<td>2007</td>
<td>679</td>
</tr>
<tr>
<td>6</td>
<td>2008</td>
<td>694</td>
</tr>
<tr>
<td>7</td>
<td>2009</td>
<td>697</td>
</tr>
<tr>
<td>8</td>
<td>2010</td>
<td>711</td>
</tr>
<tr>
<td>9</td>
<td>2011</td>
<td>739</td>
</tr>
<tr>
<td>10</td>
<td>2012</td>
<td>765</td>
</tr>
</tbody>
</table>

*Source: FAO 2011, 2012: Estimated value*

The total milk production is presented in table-4.1. India has attained and retained the first rank in milk production in the world. The first five countries in the world producing maximum milk are India, USA, China, Pakistan and Brazil. Today, India enjoys a broad range of opportunities of the global dairy industry. It offers opportunities to the global entrepreneurs to capitalize on the world’s largest and fastest growing milk market. On the basis of this assumption global milk production in 2013 was expected to reaches 780 million tonnes. Milk production is expected to increase and it can even rise above 794 million tonnes in 2017.1.
4.2.2 Global Milk Consumption

Every human being in the world likes to consume milk and milk products. So consumption and usage level of milk is daily increasing in our country. The per capita availability of milk in the world is presented in Table 4.2.

**TABLE 4.2**

GLOBAL MILK CONSUMPTION

<table>
<thead>
<tr>
<th>SL.NO</th>
<th>YEAR</th>
<th>Per capita milk consumption kg/capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2000</td>
<td>95.5</td>
</tr>
<tr>
<td>2</td>
<td>2005</td>
<td>100.1</td>
</tr>
<tr>
<td>3</td>
<td>2007</td>
<td>102.5</td>
</tr>
<tr>
<td>4</td>
<td>2008</td>
<td>103.4</td>
</tr>
<tr>
<td>5</td>
<td>2009</td>
<td>103.0</td>
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<tr>
<td>6</td>
<td>2010</td>
<td>104.0</td>
</tr>
<tr>
<td>7</td>
<td>2011</td>
<td>105.6</td>
</tr>
<tr>
<td>8</td>
<td>2012</td>
<td>107.5</td>
</tr>
</tbody>
</table>

*Source: FAO, 2012*

Global milk consumption was projected to increase from 105.6 kg/year in 2011 to 107.5 kg/year in year 2012 (1.9 per cent increase). The average person in a developing country was expected to consume 62.7 kg of milk in 2012 (2.8 per cent annual increase) whereas in the industrialized countries people would consume 238.1 kg of milk in 2012 (1.4 per cent annual increase). Table 4.2 illustrates per capita milk consumption in the world from 2000 to 2010 and projected values for 2011 and 2012².
4.3 Dairy Cooperatives in India

It was in 1904 when the seed of cooperation was sown in India with the passage of the first Cooperative Act. Since then, the cooperative movement has made rapid strides in all fields of socio-economic activities. In the fields of agriculture credit, fertilizer disbursement, sugar production and handloom the cooperatives have created a strong niche. But, the contribution of cooperatives to India’s dairy industry is enormous. The cooperatives have ushered in milk revolution in the country.

The dairy industry has made India proud in recent times. India is the leading producer of milk in the world. Dairy cooperatives are the backbone of Indian dairy industry. Dairy cooperatives have excelled in their areas of cooperatives. The figures justify this. During the year 2002-2003 per capita availability of milk was 230 (gms/day). Today, it is 299 (gms/day) per capita availability\(^3\). Milk is the country's number one agricultural commodity. The reason for the success of dairy cooperatives is empowerment. These cooperatives are not controlled by the government. The farmers own and manage them based upon the needs and demands of the community. The germs of milk revolution were laid down way back in 1946 in a small town called Anand in Western India.
4.3.1 Dairying in India

Dairy development in India has been acclaimed as one of modern India’s most accomplished development programmes. States like Gujarat, Maharashtra, Uttar Pradesh, Haryana, Rajasthan, Andhra Pradesh, Karnataka and Tamil Nadu are surplus in milk production. The consumption pattern indicates that 45 per cent of milk is consumed in liquid form, while butter milk/separated milk (butter and ghee) constitutes 34 per cent. The balance is in the form of milk powder, ice creams, cheese and other products. Indian dairying is emerging as a sunrise industry. India represents one of the world’s largest and fastest growing markets for milk products due to the increasing disposable incomes among the 250 million strong middle class.

In India there are about 56 per cent of world’s buffaloes (105.05 million) with 1\textsuperscript{st} position, 12.5 per cent cattle (199.07 million) with 2\textsuperscript{nd} position, 20.4 per cent small ruminants comprising 144 million goats and 72 million sheep with 2\textsuperscript{nd} and 3\textsuperscript{rd} position respectively in the world. The total livestock of the country comprises 37.6 per cent cattle, 19.9 per cent buffalo, 13.5 per cent sheep, 26.5 per cent goats and 2.1 per cent other livestock species. Among cattle population, crossbreds constitute 16.6 per cent (33.06 million) and indigenous about 83.4 per cent (166.01 million). Milk production in India increased from 17 mt in 1950 to 128 mt in 2011-12.
4.3.2 Milk Production in India

Milk production is the biggest segment within Indian Agriculture. In the Indian context of poverty and malnutrition, milk has a special role to play for its many nutritional advantages as well as income generation for millions of farmers. Unlike other countries, India’s dairy industry is facing the problem of low milk prices, prohibition of all the export benefits given to milk and value added milk producer’s exports as well as loss of indigenous cattle breeds due to cross breeding. The demand for dairy products, also from countries that are unlikely to reach self sufficiency in milk production, will create new market chances for dairy exporters to get a higher share on the world export market. India the world largest milk producer has the chances too. The production and per capita availability of milk in India is shown in Table 4.3

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Year</th>
<th>Production(million Tonnes)</th>
<th>Per capita Availability (gms/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2002-2003</td>
<td>86.2</td>
<td>230</td>
</tr>
<tr>
<td>2</td>
<td>2003-2004</td>
<td>88.1</td>
<td>231</td>
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<tr>
<td>3</td>
<td>2004-2005</td>
<td>92.5</td>
<td>233</td>
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<tr>
<td>4</td>
<td>2005-2006</td>
<td>97.1</td>
<td>241</td>
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<tr>
<td>5</td>
<td>2006-2007</td>
<td>102.6</td>
<td>251</td>
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<td>6</td>
<td>2007-2008</td>
<td>107.9</td>
<td>260</td>
</tr>
<tr>
<td>7</td>
<td>2008-2009</td>
<td>112.2</td>
<td>266</td>
</tr>
<tr>
<td>8</td>
<td>2009-2010</td>
<td>116.4</td>
<td>273</td>
</tr>
<tr>
<td>9</td>
<td>2010-2011</td>
<td>121.8</td>
<td>281</td>
</tr>
<tr>
<td>10</td>
<td>2011-2012</td>
<td>127.9</td>
<td>290</td>
</tr>
</tbody>
</table>

Source: Department of Animal Husbandry, Dairying & Fisheries, Ministry of Agriculture, GOL. National Dairy Development Board (NDDB)
The above table 4.3 shows that milk production in India reveals an exceptional success story as the milk production increased remarkably from million tones in 1950-51 to 121.8 million tones in 2010-11 and emerged as the world leader in milk production ahead of the second largest producer, the USA. Further, the milk production India is expected to reach close to the levels of production in by the European Union, as a bloc. By 2012 the per capita availability of milk in India also rose from 124 gram/day in 1950-51 to 290 grams/day in 2011-12. It increased year by year and in 2012-2013 the milk production was 133 million tones with per capita availability of milk in India 300 gram/day. Hence, it may be concluded that milk production increased during year 2012-2013.

4.3.3 Milk Consuming Pattern in India

In India about 46 per cent of the total milk produced is consumed in liquid form and 47 per cent is converted into traditional products like cottage butter, ghee, paneer, khoya, curd and malai. Only 7 per cent of the milk goes into the production of western products like milk powders, processed butter and processed cheese. Among the milk products manufactured by the organized sector some of the prominent ones are ghee, butter, cheese, ice creams, milk powders, malted milk food and condensed milk infant’s foods. Of these ghee alone accounts for 85 per cent. It is estimated that around 20 per cent of the total milk produced in
the country is consumed at producer-household level and the remaining is marketed through various cooperatives, private dairies and vendors.

4.3.4 Constraints in Milk Marketing

The dairy sector is characterized by small-scale, scattered, and unorganized milk-animal holders; low productivity; inadequate and inappropriate animal feeding and health care; lack of an assured year-round remunerative producer price for milk; an inadequate basic infrastructure for provision of production inputs and services; an inadequate basic infrastructure for procurement, transportation, processing and marketing of milk; and lack of professional management.

Other important characteristics of the dairy sector are the predominance of mixed crop-livestock farms and the fact that most of the milk animals is fed on crop by-products and residues, which have very low opportunity costs. Additionally, the dairy-development policies and programmers that are followed, including those relating to foreign trade, are not congenial to the promotion of sustainable and equitable dairy development.

Low productivity of milk animals is a serious constraint to dairy development. The productivity of dairy animals could be increased by crossbreeding low-yielding nondescript cows with high-yielding selected indigenous purebreds or suitable exotic breeds in a phased
manner. The cattle-breeding policy should not only focus on milk yield but should also provide for the production of good-quality bullocks to meet the draft-power requirements of agriculture. Upgrading nondescript buffalo through selective breeding with high-yielding purebreds such as Murrah, Mehsani or Nili Ravi should be given high priority in all areas where buffalo are well-adapted to the agro-climatic conditions.

India remains grossly primitive compared to its western counterparts. It begins with the largely unregulated sector, which handles the majority of the milk production, providing ample opportunity for malpractice. Some of the common forms of malpractice include false measurements in the selling of milk and adulteration of milk. Another major impediment to an efficient marketing system is the presence of numerous intermediaries, which take advantage of producers’ weakness. In many cases, intermediaries dictate the price by advancing a loan to the milk producers. Producers’ bargaining power is also limited because of perishable quality and bulkiness of milk. In addition, the lack of proper infrastructure for transportation, distribution, and storage also makes milk procurement difficult. On the other hand, it will be impossible for most producers to market their milk without the presence of these market intermediaries. The Co-operative Societies Act continues to be restrictive rather than enabling, even though the Anand
Pattern milk producers’ co-operatives have emerged as the most stunningly effective institutional model for milk marketing.

4.4 Dairy Development in Tamilnadu

The Dairy Development Department was established in 1958 in Tamilnadu. The administrative and statutory control over all the milk cooperatives in the state was transferred to the Dairy Development on 1.8.1965. The Commissioner for Milk production and Dairy Development were made as the functional Registrar under the Tamilnadu Cooperative Societies Act. With the adoption of ‘Anand Producers” Federation Limited was registered’ Federation Limited was registered in the State on 1st February 1981. The commercial activities of the Department such as milk procurement, processing, chilling, packing and sale of milk to the consumers, hitherto dealt with by the Tamilnadu Dairy Development Corporation Ltd., were transferred to the newly registered Tamilnadu Cooperative Milk Producers’ Federation Limited, popularly known as “Aavin”.

4.4.1 Dairy Development Programme

The government of India sanctioned Rs. 312.15 lakhs to the Sivagangai District Cooperative Milk producers Union (DCMPU) as full grant to implement ‘Intensive Dairy Development Programme in Sivagangai and Ramanathapuram Districts. Under the programme, funds
have been sanctioned to unions to improve milk procurement milk sales, creation of infrastructure required for milk processing and marketing, extension of input activities and manpower development in the district for a period of five years. During the year 2011-2012, the GOI accorded administrative approval for the implementation of the ‘Intensive Dairy Development Programme’ in Tirunellveli and Kanyakumari DCMPUs for a total outlay of 554.06 lakhs and 291.77 lakhs respectively. Tirunelveli, Thoothukudi and Kanyakumari Districts will be benefited under the scheme.

4.4.2 Tamil Nadu Co-Operative Milk Producers

"Aavin" is the apex body for the Tamil Nadu co-operative milk producers. It was established in the year 1958. It has 17 District Cooperative Milk Producers' Unions. The Federation has four dairy plants in Chennai, one at Ambattur with a capacity of 4.00 lakh litres per day, another at Madhavaram with a capacity of 2.00 lakh litres per day and the third dairy at Sholinganallur with a capacity of 4.00 lakh litres per day. These dairies collect milk from District Unions, process it and pack in sachets and send for sale to the consumers in and around Chennai City. The fourth product dairy at Ambattur is engaged in the manufacture of milk products such as Yogurt, ice cream, Khova, Kulabjamoon, Buttermilk, Curd and Mysore pa6.
4.4.3 Milk Procurement in Tamilnadu

Tamil Nadu is an agricultural state and majority of the farmers own cattle. It is one of the frontline states of India in milk production. It occupies the 4th place in milk procurement from co-operatives in the country. During 2012-2013 the average milk procurement by dairy co-operatives was 24.36 lakh litres per day. The milk procurement by the dairy co-operative Societies in Tamil Nadu are shown in Table 4.4.

**TABLE 4.4**

**MILK PROCUREMENT IN TAMILNADU**

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Year</th>
<th>Procurement in lakh liter (per day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2002-2003</td>
<td>15.79</td>
</tr>
<tr>
<td>2</td>
<td>2003-2004</td>
<td>17.26</td>
</tr>
<tr>
<td>3</td>
<td>2004-2005</td>
<td>20.56</td>
</tr>
<tr>
<td>4</td>
<td>2005-2006</td>
<td>21.59</td>
</tr>
<tr>
<td>5</td>
<td>2006-2007</td>
<td>22.10</td>
</tr>
<tr>
<td>6</td>
<td>2007-2008</td>
<td>21.64</td>
</tr>
<tr>
<td>7</td>
<td>2008-2009</td>
<td>22.00</td>
</tr>
<tr>
<td>8</td>
<td>2009-2010</td>
<td>22.30</td>
</tr>
<tr>
<td>9</td>
<td>2010-2011</td>
<td>20.67</td>
</tr>
<tr>
<td>10</td>
<td>2011-2012</td>
<td>21.40</td>
</tr>
</tbody>
</table>

Source: (TCMPF) Aavin National Dairy Development Board (NDDB websit)

The above table shows that the milk production in Tamilnadu during the period 2002-2003 was only 15.79 lakh liter (per day). The milk procurement during 2012-2013 increased to 24.36 lakh liters per day on an average as against 20.67 lakh liters in 2010-2011. An all time
high of 27.15 lakh liters was achieved in 2012. It increased year by year and in 2012-2013 the milk production was 24.36 lakh liter (per day)\textsuperscript{7}.

4.5 District Co-operative Milk Producers Union in Kanyakumari

Kanyakumari District Co-operative Milk Producer’s Union No.2946 was first registered as Nanjil Nadu supply society on 25\textsuperscript{th} January 1949 and it started functioning from 7\textsuperscript{th} February 1950. Later it was elevated as Nanjil Nadu Milk Supply Co-operative Union by January 1951. During 1961 it was renamed as Kanyakumari District Co-operative Milk Producers Union on 16\textsuperscript{th} February 1982. This diary is located at Nagercoil, the headquarters of this district. It is proposed to increase the procurement and sales to 30000 liter per day. In this regard submitted a proposal is submitted to the central office for the inclusion of rupees 148.35 lakhs for the purchase of plant equipment under 100 per cent central government subsidies. Area of operation of milk procurement covers all the four taluks namely Agastheeswaram, Thovalai, Kalkulam and Vilavancode. During the year 2013-2014 there were 105 societies of which 54 were functioning and remaining 58 are dormant\textsuperscript{8}.

4.5.1 Growth of Milk Production in Kanyakumari

Kanyakumari district is the least milk producing district compared to other districts in Tamil Nadu. According to the 18th Livestock Census 2007, the cattle population, which from the base of
dairy development in the district was 92250. It was only 0.82 per cent of the State’s cattle population. The district is in an ascending path in milk production. The district currently occupies a much higher position in milk production owing to sustained efforts towards dairy development department. The total milk production in 2002-2003 was 466860 litre, which increased to 482640 litre during 2011-2012. The growth in milk production in Kanyakumari district is presented in Table 4.5.

**TABLE 4.5**

**MILK PRODUCTION IN KANYAKUMARI DISTRICT**

<table>
<thead>
<tr>
<th>SL.NO</th>
<th>Year</th>
<th>Milk production (litre)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2002-2003</td>
<td>466860</td>
</tr>
<tr>
<td>2</td>
<td>2003-2004</td>
<td>529104</td>
</tr>
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<td>3</td>
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<td>520476</td>
</tr>
<tr>
<td>10</td>
<td>2011-2012</td>
<td>482640</td>
</tr>
</tbody>
</table>

**Source:** Deputy Director of Animal Husbandry; Cattle Breeding and Fodder Development, Nagercoil.

Table 4.5 indicates that the milk production in Kanyakumari district during the period 2002-2003 was only 466860 litre. It increased year by year and in 2011-2012 the milk production was 482640 litre.
Hence, it may be concluded that milk production increased during year 2012-2013.

4.5.2 Aavin Kumari in Nagercoil

Milk and milk products is the second largest contributor to the gross agricultural output even higher than wheat India’s milk production ranks first in the world. Needless to say our livestock sector, cattle and buffaloes occupy a pivotal position playing a vital role in the national economic development. India has not only one of the world largest human population its cattle population is as well world’s largest and it also has some of the best breed of cattle and buffaloes.

Even though man knew about the use of milk in his daily life, to preserve milk was not known. As per the ancient records available in the days of Genghis Khan, (1162-1227), He used concentration and fermentation as only the techniques, which were rather very crude way of preserving milk. The necessity of preserving milk was felt because the facilities to process store and transport such a highly perishable commodity over long distances connecting the milk pockets or rural producing centers with the urban consuming areas were absolutely absent. The crude methods used for the concentration and fermentation of milk formed the basis of the development of milk products. The word
cattle was formerly used to donate all forms of livestock but it is now commonly restricted to oxen or meat cattle.

4.5.4 Marketing of Aavin Milk in Kanyakumari

The essence of marketing is an exchange or a transaction, intended to satisfy human needs or wants. That is marketing is a human activity directed to satisfying needs and wants through an exchange process. A demand is a want for which the consumer is prepared to pay a price. A want is anything or service the consumers desire or seek. Wants become demand for anything or service the consumer’s desire or seek. Wants become demand when backed by purchasing power. A need is anything the consumer feels to keep him alive and healthy. A transition consists of a value between two parties. A transition differs from transfer. A transfer may receive nothing in return. The aim of marketing is to make sales in order to earn reasonable profit for the producer. It aims at the creation of welfare and standard of living to the society. The function involved in the activities of goods from the producer to the consumer.

4.5.5 Importance of Marketing

Marketing is a connecting link between the consumers and the producer. Marketing process brings new items to retail shops, from where the consumers can have them.
Marketing helps to increasing the living standard of people. Because of mass production costs of manufacturing and marketing have come down. This facilitates the fixing of cheaper rates and is a boon to the society. Thus reduction in price will result in a higher standard of living.

Marketing helps to increase the nation’s income. Efficient system of marketing reduces the cost to minimum; this in turn lowers the price and the customer’s purchasing power increases. This will increase the national income.

Marketing process increases the employment opportunities, for continuous production, continuous marketing invites numerous activities and thus job opportunities are provided to many people. In a country like India, it is really true, because they are sources of livelihood to many people.

Marketing removes the imbalance of supply by transferring the surplus to deficit areas though better transport facilities. Marketing helps to maintain economic stability and rapid development in under developed or developing countries. If production is more than demand, the excess goods cannot be sold at acceptable price. Marketing includes all activities in the creation of utilities from place, time and position.
4.5.6 Marketing of Aavin Products

The increased milk production and efficient processing of milk will be of no use if a satisfactory marketing system is not developed. Milk is a perishable good since it supports bacterial growth under atmosphere temperature. The consumer does not wish to purchase his whole day’s requirement at a time due to possibility of contamination and lack of refrigeration facilities. This forces aavin to market its products within a stipulated time.

4.5.7 Marketing Department

The department is headed by managing director and under the control of the manager. Milk is marketed in polythene covers in 500 ml and 250 ml. It is supplied by the organizational employees (milk vendor) at the residential areas. In addition to this, it is also supplied by several milk parlor agents in non-residential areas. The milk is supplied every morning and evening. The consumer has to pay one month’s cost of milk in advance. For milk cards it effects from 16th of every month to 15th of next month. Based on this cards milk is supplied to the consumers by the vendor.

4.5.8 Distribution Channels of Milk

Consumers require only a tiny quantity of milk every day. Producers are not in milk every day. Producers are not in a position to supply such tiny quantities to a large number of consumers. Channels
resolve this dilemma. In Kanyakumari District there are five channels of distribution of milk. As milk is a perishable item the producer of milk chooses the convenient and strategic channel that may fetch him remunerative price without delay. The objectives of the middlemen in the distribution channel are regularity in supply of milk ensuring quality and some margin. Primary dairy co-operative society occupies a predominant position in the channel of distribution of milk\textsuperscript{10}. The types of channels of distribution of milk in Kanyakumari district are given below.

Channel I- Producer – Primary dairy cooperative society – KDCMPU – Consumers

Channel II – Producer– Primary dairy cooperative society – Consumers

Channel III – Producer– Milk vendor – Consumers

Channel IV – Producer– Private Dairy Agency - Consumers

Channel V – Producer – Consumers

4.5.9 Distribution channel of Aavin milk

Aavin milk is sold to the public through six ways. They are as follows;

(i) Cash sales

Aavin milk is selling milk packets for cash throughout the district. This sale is done both in the morning and evening.
(ii) **Credit sales**

They are supplying the milk on credit to many schools, hostels, college canteens, hospitals etc. For credit sale the union fixes the rate as Rs 28 per liter.

(iii) **Milk parlors**

Aavinkumarai has 4 milk parlors, through which they sell milk packets. The four parlors are situated in Nagercoil at the following places:

They are 1) Near Anna bus stand
2) Uzhavarchandhai
3) Express bus stand
4) Collectorate

Through these milk parlors sachet milk is distributed to the card holders and other regular customers. Hot milk is also served to the customers. Milk peda, ghee and flavored milk are also available in these parlors.

(iv) **Card sales**

Milk cards are issued for those who pay the amount in advance. The cards will be issued from 1st to 14th of every month by two centers in Nagercoil. They are located at Union premises, K.P.Road, Nagercoil. Milk parlor, Cape road, Nagercoil.
Customers can use the card for the purchase of milk from the distribution points 16th to 15th of the next month. Since they are regular customers and moreover pay the money in advance, the milk is supplied on occasional rate @ Rs. 28.

(v) **Agent sales**

The organization collects Rs.1000/- as business deposit for agent. The agent will be given a commission of 0.40 paise per litre. The byproducts are sold to them on commission basis. The agents prepare and supply coffee and tea using the milk supplied to them. Some of the customers of the union are also attached to these agents to get their milk for the card purchased from the union.

(vi) **Special order sales**

Aavin handles special orders for special occasions like marriage functions, temple festivals, house warming functions etc.

**4.5.10 Consumer satisfaction**

Consumers are fully satisfied with the quality of milk. As a result, the marketing has been extended to nook and corner of this district. The procuring price depends on the contents and SNF (solid no fat) the selling price is fixed by the government of Tamil Nadu with reference to the current situations. The agent’s commission is 0.40 paisa per litre the agency should have to renew contract every year.
There are number of competitors available who are selling the sachet milk. They are not equal competitors against Aavin Milk companies. Percentage of consumption of aavin milk is big.

4.5.11 Production and Packaging Procedure

Aavin procures raw milk from the member societies producing milk. But not all of them sent to the head office. However, there is sufficient milk producing member societies who regularly supply the raw milk to the union.

There are 54 MPCS (Milk Producing Co-operative Society) in this district of which 48 societies are functioning & the remaining 6 are dormant. Only 48 societies are now supplying milk to the union. The union is collecting milk from these societies by arranging 5 routes.

For each route there is one van which will collect the milk from different societies. Milk is collected both in the morning and evening. The price of milk is fixed based on quality of the milk (i.e) FAT and SNF present in milk. It is checked up taking milk samples from each society.

Area of milk procurement covers all the four Taluks namely, Agasteeswaram, Thovalai, Kalkulam and Vilavancode.
4.5.12 Testing of Fat and Pasteurization

Milk procured from the member societies is sent to laboratory for testing the fat content and SNF (solid no fat). If the fat content is less than 3.5 per cent then they will add the skimmed milk powder (SM powder) to make it as standard milk. If the milk is not up to the standard, the municipal authority has got every right to take samples. After testing the milk, the milk will be pasteurized. Testing of Fat and Pasteurization is presented in the Table 4.6.

**TABLE 4.6**
**TESTING OF FAT AND PASTEURIZATION**

<table>
<thead>
<tr>
<th>SL.NO</th>
<th>Type of machine</th>
<th>Name of the machine</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pasteurization</td>
<td>Jektron</td>
</tr>
<tr>
<td>2</td>
<td>Boilers</td>
<td>Jebson boiler &amp; Jaya boiler</td>
</tr>
<tr>
<td>3</td>
<td>Refrigeration</td>
<td>Frick &amp; Syncho compressor</td>
</tr>
<tr>
<td>4</td>
<td>packing</td>
<td>Prepac machine</td>
</tr>
</tbody>
</table>

**Source**: Primary Data

Pasteurization is the main processing activity undertaken by the union. The pasteurization plant is a two way processing. One is for heating to maximum temperature of 72 to 80 centigrade and the other is for cooling at a temperature of 3 to 5 centigrade. The processing avoids bacterial effect. For processing, the union has one plant in Nagercoil and a chilling centre at Marthandam.
Once pasteurization is done, the milk will be free from bacteria. The pasteurized milk will be transferred to a new machine in the next stage where it will become cold to 4 degree. The above processed milk is stored in a tank. A small quantity of milk will be taken from the tank for testing fat and SNF. The laboratory staff will test the fat and SNF.

If the fat and SNF are equal when compared to the previous test, then there is no problem in marketing of the milk; otherwise they will add SM powder to make it to the standard.

Production is carried out continuously. It is carried out by special purpose machine (SPM). The procurement at present is 15000 litres per day, but it is targeted to 30000 litres day. Current production per month is 3, 60,000 litres. An average of 18,500 litre is sold every day.

The quality of the milk supplied is 3.0% FAT and 8.0% SNF% and it is the toned milk. Milk with 4.5% FAT and 8.5% SNF is the standardized milk which is collected from Trinelveli by Aavin\textsuperscript{11}.

\textbf{(i) Determination of FAT}

10 ml of dilute sulphuric acid is taken in a beutrometer by using tilt measure add 10.75 ml of milk is added by using a pipette and 1ml of amil alcohol. It is shaken well and the beutrometer is inserted into a centrifuge machine. The machine is rotated for 3 minutes by using power or hand. Then the FAT content is found out in the beutrometer.
(ii) **Determination of solid Not Fat (SNF)**

The lactometer reading of milk by using thermometer. Then note the correct lactometer reading (CLR) is noted and calculate SNF is calculated through the Richmond’s formula which is given below:

\[
\text{SNF} = \frac{\text{CLR}}{4} + 0.36 + 0.2 \times \text{FAT}
\]

**4.5.13 Packaging**

Packaging is an important part in marketing. The pasteurized milk is packed in 250 ml, 500ml. Previously 1 litre milk was also packed but it is stopped now due to lack of demand of 1 litre packet. Leakages are found more in 1 litre package. The name of the union, quantity of milk and symbol of the union are printed on the packet.

- Capacity 1 litre - 5000 packets per hour
- Capacity 500ml - 5140 packets per hour
- Capacity 250ml - 5260 packets per hour

Through this effective distribution network, this organization could fetch a good market and create a good will among customers.

**4.5.14 Other milk products**

The Kanyakumari District Co-operative Milk Producer’s Union is selling milk and its by products under its trade name “Aavin”. It is preparing products like peda, ghee, rose milk, flavoured milk, butter, badam powder etc. 2 ½ kg of milk peda is prepared from 10 liters of milk and 1 kg sugar. This society purchases ghee from Salem, Erode,
Vellore and Trinelveli district dairies. These products are supplied through aavin agents and milk parlors maintained by the union. It has got a good appreciation from the general public.

4.5.15 By products

The union is selling milk and its by-products have under the trade name “Aavin“. The production of indigenous milk products has been monopoly of sweet meat sellers through ages. Dairy scientists are bringing about improvement in the shelf-life of these products through process innovation. The term “milk product” is confined to only indigenous milk products and cord, white butter and butter milk and ghee are placed at the top of the list of indigenous milk product. They form even today the backbone of the Indian confectionary.

The by-products of Aavin milk dairy are (Khova), Ghee, flavoured milk, butter milk. The remaining by-products such as mango drinks ,milk cake and Mysore pak are procured from other dairies and sold in Kanyakumari district through various retail culled milk parlours. By products sales details is presented in Table 4.7.
## TABLE 4.7

**BY PRODUCTS SALES DETAILS**

<table>
<thead>
<tr>
<th>SL. NO.</th>
<th>Name of the Product</th>
<th>2007-08</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>2011-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Milk peda (kg)</td>
<td>11640</td>
<td>17055</td>
<td>15177</td>
<td>13887</td>
<td>18864</td>
</tr>
<tr>
<td>2</td>
<td>FM bottle 200 ML</td>
<td>10374</td>
<td>8805</td>
<td>28211</td>
<td>4012</td>
<td>25381</td>
</tr>
<tr>
<td>3</td>
<td>Butter Milk 200 ML</td>
<td>18784</td>
<td>79014</td>
<td>68283</td>
<td>61870</td>
<td>80743</td>
</tr>
<tr>
<td>4</td>
<td>Badam Mix 200 grm</td>
<td>89187</td>
<td>168091</td>
<td>167720</td>
<td>180053</td>
<td>21586</td>
</tr>
<tr>
<td>5</td>
<td>Ghee 1000 Ml Jar</td>
<td>9513</td>
<td>11189</td>
<td>18523</td>
<td>14328</td>
<td>17394</td>
</tr>
<tr>
<td>6</td>
<td>Ghee 500 Ml Jar</td>
<td>17470</td>
<td>18302</td>
<td>23968</td>
<td>17286</td>
<td>20648</td>
</tr>
<tr>
<td>7</td>
<td>Ghee 200 Ml Jar</td>
<td>16625</td>
<td>13116</td>
<td>25159</td>
<td>11219</td>
<td>19008</td>
</tr>
<tr>
<td>8</td>
<td>Ghee 15 Lit. Jar</td>
<td>40</td>
<td>100</td>
<td>360</td>
<td>1260</td>
<td>52</td>
</tr>
<tr>
<td>9</td>
<td>FM Tatra</td>
<td>44095</td>
<td>21325</td>
<td>9342</td>
<td>77825</td>
<td>-</td>
</tr>
<tr>
<td>10</td>
<td>Butter (500grm)</td>
<td>1200</td>
<td>600</td>
<td>270</td>
<td>994</td>
<td>670</td>
</tr>
</tbody>
</table>

**Source:** Annual Report of Kanyakumari District Co-operative Milk Producers Union, 2012-2013.

### 4.5.16 Difficulties faced during production

The primary milk producers’ co-operative societies are procuring milk based on quality (i.e) litre base. But Aavin Kumari is procuring milk from MPCS based on quality base. This has created problems in procuring milk. Vehicle’s breakdown, vehicle contractor’s absence or coming late is some of the factors that create problems in transportation of procured milk from MPCS to the Aavin production unit.

In our district, there are some private diaries which collect milk from cattle owners. This reduces the number of cattle owners providing milk to Aavin.
In some rare situation, the production is affected by repair of machines. For example, in 1992 the packaging machine was under repair and it took 3 days to recover the machines to normal condition. During these 3 days production of milk packets was affected tremendously.

During summer season MPCS and other union provide less quality of milk to Aavin. This is because there is more demand for milk by the cattle owners due to summer vacation. This indirectly affects the production of Aavin milk products.

To satisfy the public, Aavin collects milk from Trinelveli district co-operative milk producers union. This increases the transportation expenses there by increasing the production expense.

4.6 Summary

This chapter has presented a global milk production and consumption, Dairy Co-operative in India, milk production in India, Tamilnadu, Kanyakumari. The production and marketing function has proved that in both the areas under study.
REFERENCES


