7.1 INTRODUCTION

The study has been entitled as “Consumers’ Perception towards dairy products in Madurai district”. In this study the growth of dairy sector and the various schemes implemented by the Government of India to improve the milk production are discussed. Also the role of private players in the Indian dairy industry is also analysed.

7.1.1 The Objectives

The objectives of the study are

1. To study the profile of dairy sector at Global level

2. To examine the profile of dairy sector at National level

3. To analyse the profile of dairy sector at State level and District (Madurai) level

4. To observe the socio-economic profile of the respondents

5. To discuss the consumption pattern of the respondents towards milk and dairy products

6. To study the brand preferences and influencing factors of the respondents towards dairy products

7. To find out the satisfaction level of the respondents

8. To analyse the problems faced by the respondents in dairy products and
9. To offer findings and suggestions for the development of the dairy sector.

**7.1.2 Organization of the Study**

The study has been organized into seven chapters as follows.

The First Chapter deals with the introduction and design of the study.

The Second Chapter deals with the introduction and structure of dairy industry, origin and growth of dairy sector at Global, National level.

The third chapter deals with the State level and also district (Madurai) level status of the dairy sector.

The fourth chapter deals with the profile of the sample respondents, consumption pattern and source of awareness of the dairy products by the respondents and the people who influence the respondents to prefer the particular brand of dairy products.

The fifth chapter deals with the consumers’ problems, satisfaction level and their attitude towards dairy products”.

The sixth chapter deals with the perception of the respondents towards the problems are analysed based on Five-point scaling method i.e., SA – Strongly Agree, A- Agree, NO – No Opinion, DA- Disagree, SDA – Strongly Disagree.
The seventh chapter sums up the findings, conclusion and suggestions.

7.2 SUMMARY AND FINDINGS

The following are the finding of the study

In the second chapter the essence of milk and dairy products has been Asia’s milk production crossed the 250-million-tonnes in 2011, indicating that the region’s output increased five-fold over the last three decades, according to Food and Agriculture Organisation (FAO) of the United Nations. It had reported that during the same period, annual per capita consumption of milk grew from 20kg to 70kg

The USA was the largest cow's milk producer in the world accounting for 14.6% of world production, producing nearly 91 million tonnes in 2012. This chapter deals with the import and exports of dairy products in selected countries. Production of milk and dairy products in various nations has also been explained.

It is seen that European Union is expected to lead in the production of cows’ milk and cheese in December 2015. India is expected to lead in the butter production in December 2015. New Zealand is expected to lead in the Whole Milk Powder production. India is expected to lead in the consumption of milk followed by European Union. European Union is expected to lead in the cheese consumption followed by United States. China is anticipated to
lead in the whole milk powder consumption. European Union is expected to lead in the exports of cheese followed by United States. New Zealand is expected to lead in the exports of butter and whole milk powder in December 2015. Russia is expected to lead in imports of butter. China is expected to be the leading importer of whole milk powder in December 2015.

The per capita availability of milk is anticipated to reach 336 grams per day in 2017 as against 291 grams per day in 2012. Uttar Pradesh, Rajasthan, Andhra Pradesh, Gujarat and Punjab are the major milk producing states in India. Major destinations of dairy products from India are Bangladesh, United Arab Emirates, Nepal and Bhutan. Private dairies like Tirumala Milk Products Pvt. Ltd and Danone, Nestle India, Indocon Agro and Allied Activities Pvt. Ltd, Parag Milk Foods Pvt. Ltd and Prabhat Dairy Ltd. have also increased its presence in the Indian dairy sector with slew of product launches such as flavored curd, yoghurt etc.

India has witnessed a great achievement in dairy industry due to the implementation of “Operation Flood” programme implemented in three phases(1970-96). A World Bank audit showed that of the Rs. 200 crores invested in Operation Flood (II), the net return into the rural economy has Rs. 24,000 crores per year over a period of ten years, or a total of Rs. 2,40,000 crores in all. No other major development programme in the world has matched this input-output ratio. As per the industry estimates, the share
of VADP in the milk and milk derivatives segment is growing currently around 25 per cent every year and is expected to grow at the same rate until 2019-20. Several measures have been initiated by the Government to increase the productivity of livestock, which has resulted in increasing the milk production significantly from the level of 102.6 million tonnes at the end of the Tenth Plan (2006-07) to 127.9 million tonnes at the end of the Eleventh Plan (2011-12). Milk production in the beginning of Twelfth Plan (2012-13) was 132.43 million tonnes with an annual growth rate of 3.54 per cent. The per capita availability of milk was around 296 grams per day in 2012-2013. Uttar Pradesh was anticipated to top first by producing 24,194 thousand tonnes of milk followed by Rajasthan (14,573 thousand tonnes), Andhra Pradesh (13,007 thousand tonnes), Gujarat (11,112 thousand tonnes) and Punjab (10,011 thousand tonnes). The value of Indian dairy exports in 2013-14 was USD 546.1 million. Bangladesh, UAE, Pakistan, Nepal and Bhutan were among the top export destinations for dairy products from India during 2014-15. India’s import of dairy products during 2012-13 and 2013-14 accounted for US $ 30.65 and US $35 million. Milk and cream concentrates, whey powders, and cheese were major products imported among dairy products. New Zealand, France and Australia were the major suppliers of dairy products to India.

The Intensive Dairy Development Programme, strengthening infrastructure for quality and clean milk production, Assistance to Cooperatives, and Dairy Entrepreneurship Development Schemes are some
of the Indian Government’s important schemes / programmes for meeting the growing demand for milk. Ministry of Food Processing Industries (MoFPI) also provides assistance under National Mission on Food Processing (NMFP) for setting up / upgradation of milk processing unit and setting up of cold storage for dairy products. During the last five years, USD 150 million had been invested by private equity investors in the Indian dairy industry.

The third chapter discusses about the dairy sector in Tamilnadu and Madurai district. Tamilnadu ranks eighth in the milk production and cooperative societies were established in 1920. The State Government has taken measures to improve the status of milk producers by timely payment to the producers, remunerative price, subsidy schemes and inputs like breeding facilities, cattle feed etc. There are 11,503 Co-operative Societies and 4,29,080 pouring members in TamilNadu. In Madurai district, there are 1,002 functional societies and 19,663 pouring members. There has been an increase in the procurement of milk by almost all the Unions during 2012-13 and there has been a reduction in the procurement of milk during 2013-14 except Sivagangai and Kancheepuram-Tiruvallur districts due to the drought in TamilNadu. There is a reduction in sales at Villupuram, Erode, Virudhunagar and Thirunelveli during the year 2013-14. Export of UHT milk has been increased every year by 50 per cent, ghee by 33 per cent and SMP by 100 percent from the base year 2007-08 to 2011-12.
There was a constant increase in the quantity of milk procured from the dairy co-operative societies by Madurai Aavin since 2001 to 2011. In 2010, there is a decrease in the procurement of milk, due to the upcoming of private dairying. There had been an increase in the procurement since 2011 to 2013 and reduction in the milk procurement by the Union during the year 2013-14. There had been an increasing trend in the procurement of milk by the Union from the societies since 2011 to 2013. There was an increase in the average sales of fluid milk per day since 2001 to 2009. The sales were reduced from 2010 as the milk was diverted to Chennai and the procurement was low. Sales of milk per day show an increasing trend in the Union since 2011-14. There is an uneven increase or decrease in the quantity of fluid milk produced in the Union since 2001-11. Four FBDs functioning at Dharmapuri, Salem, Erode and Madurai District Cooperative Milk Producers’ Unions convert surplus milk into Skimmed milk powder and butter. Government of India so far has sanctioned Rs.1224.21 lakhs to Vellore, Villupuram, Tricy, Dharmapuri, Salem, Kancheepuram-Thiruvallur, Erode, Nilgris and Madurai milk unions to strengthen infrastructure for quality and clean milk production.

Madurai Aavin Union has received the Shield Award for the best functioning District Union both in State and District level for the year 1993-94 and 1996 & 2007. In Madurai Aavin there are totally 936 milk producers’ societies and many self help groups for supplying milk. The
private brands like Arokya, Raj milk, Navin, Thirumala milk play a vital role in Madurai district to meet the expectations of the consumers.

The fourth chapter presents the socio-economic profile of the respondents in Madurai district. The findings are as follows; 51.5 per cent of the respondents were females. Nearly 49 per cent of the respondents belonged to the category of 40-60 years. 50 per cent of the respondents were graduates. 50 per cent of the respondents were private employees. 38.3 per cent of the respondents were in the income group of Rs.15,000/- to Rs.30,000/-. 70 per cent of the respondents were married. 56 per cent of the respondents lived in Joint families. 81 per cent belonged to the family size category of four to six members. 56 per cent were vegetarians.

51 per cent of the respondents consume milk of 500 ml to 1,000 ml per day. 42.50 per cent spent between Rs.1,000/- to Rs.1,500/- towards the consumption of milk. 83 per cent preferred the milk sachets of 3.5 gms fat content. 52 per cent of children drank the milk twice a day. It was evident that majority of the respondents (66 per cent) spent only Rs.500/- per month in consumption of dairy products. 70.5 per cent of the respondents were aware of the dairy products through television. 55 per cent of the respondents purchased dairy products from the agents.

47.5 per cent of the respondents were influenced by the husbands in choosing the milk brand. 66.5 per cent of the respondents were influenced in the purchase of chocolate by Children. 77 per cent of the respondents were
influenced by children in choosing the milk biscuit brand. 79 per cent of the respondents were influenced by children in choosing the ice-cream brand. 65 per cent of the respondents were influenced by wives towards the purchase of paneer. 75 and 78 per cent were influenced by friends and relatives in the purchase of ghee and curd respectively. 81 and 75 per cent were influenced by friends and relatives in the purchase of butter and flavoured milk respectively. Around 89 per cent of the respondents purchased prepaid milk card and ease of booth access makes them to purchase the milk card. Many respondents were of the opinion that it was very difficult for them to collect the packets at the specified time if they buy prepaid milk card. 76 per cent of the respondents preferred branded milk rather than fresh (raw) milk. Most of the respondents changed the milk brand due to lack of availability of some brands of milk. Ease accesses’ was the main factor for the respondents to purchase the dairy products from the particular store.

The fifth chapter presents the various problems, the satisfaction level and the attitude of the respondents towards the dairy products in Madurai district. The problems were analysed based on fourteen variables. The findings of the study are as follows:

1. It could be seen that the respondents were supplied with milk with “excessive fat content” as this variable had the highest score of 1506.
2. It could be seen that the respondents were much satisfied with “Aavin” brand of milk as it had secured the highest score of 2000

3. It is evident that “Amul” brand of chocolate had secured the highest score (2000) in Madurai district.

4. It is evident that “Britannia” brand of biscuit had secured the highest score (1756) in Madurai district and hence is the favorite brand of customers.

5. It is seen that “Amul” and “Arun” brands of ice-cream had secured the highest score (2000) in Madurai district and thus had become favorite brand of ice cream varieties.

6. It is observed that “Milky Mist” paneer had secured the highest score (2000)

7. It is seen that “Idhayam” ghee brand had secured the highest score (1938)

8. It is evident from “Cavin” curd brand had secured the highest score (1938).

9. It surmised that “Amul” butter brand had secured the highest score (1852).

10. It is evident that “Aavin” and “Ruby” Flavoured milk brands have secured the highest score (1899) in Madurai district.

11. It is evident that most (245) of the respondents preferred “Aavin” brand of milk due to its price factor.
12. It is seen that most of the respondents preferred “Amul” and “Cadbury” brand of chocolate due to its price, quality, brand image, form, colour and other factors.

13. It is gleaned that most of the respondents preferred “Parle” and “Britannia” brands of biscuits due to its quality and price.

14. It is observed that most of the respondents preferred that “Hatsun” ice-cream due to its brand image.

15. It is seen that most of the respondents preferred “Milky Mist” brand of paneer due to its quality.

16. It is observed that most of the respondents preferred “Gold Winner” and “Idhayam” ghee brand due to its taste and brand image.

17. It is evident that most of the respondents preferred “Aavin” curd due to its price factor.

18. It can be seen that most of the respondents preferred Hatsun butter due to its taste.

19. It is observed that most of the respondents preferred “Aavin” and “Ruby” flavoured milk due to its price factor.

In the sixth chapter, the basic factors in perception, the relationship of the profile of the respondents with the perception score towards their problems in dairy products was tested. The statistical analysis revealed that there was a significant relationship between the profile of the respondents and the opinion of the respondents towards their problems in milk and dairy products. The perception score of problem differs between male and female
respondents, the age group of respondents below 20 years and other groups, the illiterate ones and other groups, the private employees and the other groups, the income group of above Rs.2,00,000/- and the other groups, the married group and the other groups like unmarried, widow and widowers.

The relationship of the profile of the respondents with the perception score of satisfaction level towards the different attributes of the dairy products was tested. It was seen that there was no significant relationship with the perception score of satisfaction level towards different attributes of the dairy products based on gender, age, education, annual income and marital status. Only Occupation had influenced the perception score of satisfaction level towards different attributes of dairy products. As far as the overall satisfaction is concerned the respondents were found to be much satisfied with the ice-cream brands than other dairy products. The players of other dairy products have to improve their quality, taste and other attributes to attract and retain the consumers.

7.3 CONCLUSION

Our nation’s milk producers have transformed Indian dairying from stagnation to world leadership. The dairy cooperative movement has been central to the development of dairying in India.

The Indian dairy sector is the largest contributor to the agriculture Gross Domestic Product (GDP). In terms of output, milk is now the single
largest agricultural commodity in India. White revolution was very well
witnessed in India due to the Operation Flood programme which was
initiated in 1970 and the Cooperative Movement also helped us to reach this
stage. It provides employment to millions of rural farmers. Nowadays the
rural farmers in India are involved in dairying as they find it as an alternative
source of livelihood. Government of India sponsored a scheme called
'Strengthening Infrastructure for quality and clean milk production' to
strengthen infrastructure facilities and to ensure clean milk production at
village level. Government of India so far has sanctioned Rs. 1224.21 lakhs to
Vellore, Villupuram, Tricy, Dharmapuri, Salem, Kancheepuram-Thiruvallur,
Erode, Nilgris and Madurai milk Unions for the implementation of the
scheme. “In order to meet the growing demand for milk and to increase the
milk production, Union Government has started a scheme called National
Dairy Plan-Phase I for the period of 2011-12 to 2016-17 with an investment
of Rs. 2,242 crores focusing on areas like Production of high Genetic Merit
Bulls, Pilot Model for viable Doorstep A1 Delivery service, Fodder
development, Information and Communication Technology (ICT) for MIS,
Semen Production, Ration Balancing Programme, Village Based Milk
Procurement system and Learning and evaluation. National Dairy Plan
(NDP) a six year plan was drafted by the National Dairy Plan for 14 major
dairying states viz. Andhra Pradesh, Bihar, Gujarat, Haryana, Karnataka,
Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil
Nadu, Uttar Pradesh and West Bengal. So, the Government takes almost all
the measures and implements various policies and regulatory laws for the development of the dairy sector in our country. The private sector plays a pivotal role in the development of Indian dairy industry as well as produces various value added products to meet the growing demands of the consumers.

7.4 SUGGESTIONS

Certain suggestions that have come up in the wake of the study are given as follows:

1. “Excessive fat content” in milk should be reduced as it is a health issue which does not suit the children and elders. The brands should reduce the fat content so as not to harm the health of the people.

2. The price of some of the milk brands seems to be a little high. The milk brands have to reduce the price of the products based on the affordability of all the cadre of people.

3. The milk vendors have to ensure that the milk is not adulterated with milk powder and water.

4. There should be abundant supply of milk sachets of 250ml for the convenience of the consumers.

5. Only Amul and Cadbury have earned a good market share due to its price, quality, form, brand image and other factors. So, other players should improve its quality, form and other factors and they also have to offer the products at reasonable price.
6. Most of the respondents preferred “Parle” and “Britannia” brands of biscuits due to their quality and price. Other brands of biscuits should improve their quality and lower the price so as to reach the larger sections of the society.

7. “Hatsun” ice-cream is mostly preferred by many respondents in Madurai district due to its brand image. The other brands of ice-cream should improve their brand image by differentiating its products with others.

8. Most of the respondents prefer “Milky Mist” brand of paneer due to its quality. Hence the other paneer brands have to improve their quality to satisfy the consumers.

9. Many respondents prefer “Gold Winner” and “Idhayam” ghee brand due to their taste and brand image. Therefore the other ghee brands have to improve its taste and brand image to attract the consumers.

10. Many respondents preferred “Aavin” curd due to its price factor which means the price of other brands is high. Therefore the other curd brands have to reduce the price so as to increase their sales.

11. Many respondents preferred “Hatsun” butter due to its taste, so the other butter brands have to improve their taste.

12. Many respondents preferred “Aavin” and “Ruby” flavoured milk due to its price factor and hence the other flavoured milk brands have to reduce the price of their product.
13. The brand players have to ensure the availability of the products at all times for the convenience of the people.

14. The sales of expired dairy products have to be avoided by the players of dairy products.

15. ISO certification is to be obtained to ensure the quality of the product by the brand players.

16. Dairy products should always be stored in a hygienic place and at a cool temperature.

17. Awareness has to be created in the midst of the public to check the manufacturing date and expiry date before the purchase of dairy products.

18. Bank loans should be easily available for the milk vendors to increase their supply.

19. The cows and the milch animals are to be fed in a proper way to increase their productivity and they also should be kept in a hygienic place.

20. The process technology and equipment are to be designed and should be taught to the milk suppliers to manufacture peda, gulab jamun, paneer and other Indian milk products.

21. The advanced breeding technologies to accelerate the development of our high potential Indian cattle and buffalo breeds are to be developed.
22. Transportation facilities can be developed in certain rural areas to speed up the supply of milk in India.

23. Quality control methods are to be developed since milk is supplied from large number of farmers in our country.

24. Adequate nutrition for the animals is to be provided to improve the milk productivity.

25. Proper care has to be taken and preventive measures are to be adopted to avoid the diseases in the animals.

26. Rural farmers are to be educated to use advanced technologies in milking cows and to increase the milk productivity of animals.

27. The Government can invite foreign investment so that the foreign investors can introduce new technologies and produce new type of dairy products which can be exported.

Some areas of Indian dairy industry can be strengthened by the induction of specialized technologies and equipment from overseas. They are as follows:

- **Raw milk handling:** It needs to be upgraded in terms of physical-chemical and microbiological attributes of the milk collected. The use of clarification and bactofugation in raw milk processing can help improve quality of the milk products.

- **Milk processing:** Better operational efficiencies are needed to improve yields and reduce wastage, minimize fat/protein losses.
during processing, control production costs, save energy and extend shelf life. The adoption of Good Manufacturing Practices (GMP) and Hazard Analysis Critical Control Points (HACCP) would help manufacture milk products conforming to International standards.

➢ Packaging: Another area is the range of packing machines for butter, cheese and the like. Better packaging can help retain nutritive value of products packed and extend shelf life. A cold chain distribution system is needed for proper storage and transportation of dairy products.

➢ Value-added products: There is immense scope for value-added products like desserts, puddings, custards, sauces, mousse, stirred yoghurt, nectars and sherbets.

7.5 TOPICS FOR FURTHER RESEARCH

The following are the topics suggested by the researcher for the further research in dairy industry.

➢ The Role of unorganised dairy sector and its impact in Indian Economy.

➢ A study on foreign direct investment in the Indian dairy industry.

➢ The Role of cooperative movement in dairy industry in India.

➢ A study on Process technology and equipments used in dairy industry in India.