marketing cost is found to be the least. The producers price and the marketing margin is the highest in channel-I and hence the channel-I has least price-spread of Rs.7.50. Therefore, channel-I is more efficient compared with channel-II and channel-III.

It is observed that the large category of herd size has the highest marketed surplus because of high production and low family consumption. The factors namely milk production ($X_1$), education, herd size ($X_3$) of the households exhibit positive relationships with marketed surplus for all the herd sizes, whereas family size ($X_2$) exhibits negative relationship with marketed surplus for small and medium herd size.

CHAPTER VII

SUMMARY OF THE FINDINGS AND CONCLUSION

7.0 INTRODUCTION

The urban poor in India are largely the overflow of rural poor into urban areas. These migrants from rural areas to urban cities could have crossed the poverty line, had industrial development in the country been sufficiently rapid to absorb them adequately in the modern manufacturing industries. Rural poverty in India is closely related to agricultural development as agriculture is source of livelihood of large immensity of the population. Rural poverty largely emanates from the semi-feudal relation in the agriculture. The land reform measures which were undertaken after independence did not make substantial changes in the agrarian relations. Hence almost all agricultural labour households and a large proportion of small and marginal farmers and landless
non-agricultural rural labour households are poor. An agrarian system characterised by concentration of agricultural holdings and unequal access to finance and inputs such as fertiliser and the new input-input intensive technology not only widen income disparities but also results in an increase of the proportion of the people in extreme poverty. Farming is not being carried on all through the year. In many parts of India, agricultural activities are carried on only for six months so that the land owning farmers and the landless farm labourers remain unemployed for a period of six months in a year.

The problems of small farmers, marginal farmers and agricultural workers can be tackled only when prolonged strategy of providing alternative avenues of employment is adopted. From a long-term point of view possibly the best policy is to create ample employment opportunities in the allied field of agriculture. Because of the pressure on land and increasing population it is becoming more and more difficult to absorb additional labour on farms and unless other sectors of the economy create ample employment opportunities it will not be possible to solve the problems of small farmers, marginal farmers and agricultural workers. Consequently the best strategy is to promote allied agricultural activity like livestock farming. This will reduce the dependence of agricultural workers on land and increase their incomes.

Livestock farming is not only an indispensable component of agriculture, but also most suitable production system that has enormous means to improve the social economic status of the large percentage of the rural population. Livestock development
programmes are labour intensive, have favourable cost-benefit ratios and in some cases small gestation period. Most of the programmes on livestock farming are particularly suitable for weaker sections of the rural community and have redistributive effect on rural income in favour of them. Livestock farming has been one of the sectors in India where female work force participation is high. Therefore, the study about various aspects of livestock farming is essential.

The allied activities had occupied pivotal role in the production prospects of livestock and poultry, fish products and forestry products. The three sub-sectors namely animal husbandry, fisheries and forestry are providing subsidiary occupation and income to the rural masses besides contributing income to the national economy. Animal husbandry activities are all important both as principal activity and as subsidiary activity along with agriculture. Dairy fits well with farm enterprise and also creates gainful employment opportunities, which reduce rural unemployment. It contributes about six to eight per cent of the national income. This would lead to fuller utilisation of soil fertility, desirable employment for farmers throughout the year and an increase in rural incomes.

Section one of this chapter gives a brief summary of the study. Section two highlights major findings of the study. Section three discusses the policy implications. Section four suggests area for further research.

7.1 SUMMARY OF THE STUDY
For the process of economic development to become viable, it is necessary that the marketed surplus increases with increasing production volumes. And to achieve this goal, it is necessary to ascertain the determinants of marketed surplus of milk that would help policy makers in formulating policies for increasing the marketed surplus through establishment of efficient marketing systems. There is dearth of empirical evidence on the determinants of marketed surplus of milk. The increasing production of milk should lead to expansion of marketed surplus of milk. It calls for ascertaining the determinants associated with the increasing marketed surplus. This sort of study will help the planners while they frame the policy thereto. Therefore, this study makes an attempt to analyse the emerging trends in the marketing of milk in Madurai District. It also includes the cost and returns structure, determinants of milk yield, break-even analysis and the resource-use efficiency, marketing cost, margin, price-spread and marketing efficiency under the different channels of milk production.

8. Main objectives of the present study are; i) To examine the growth and structure of milk production in India, Tamil Nadu and Madurai District, ii) to analyse the cost and returns structure of milk production in the study area, iii) to investigate break-even output for milch animals during lactation period and inter-calving period, iv) to analyse the determinants of milk yield and resource-use efficiency, v) to evaluate the marketing cost, margin, price-spread of milk and their efficiency through different channels and to explore the factors affecting the marketed surplus of milk and vi) to offer Suggestions and Suitable Conclusion.
The hypotheses of the study are; i) Constant returns scale prevailed in dairying in Madurai district for both cow and buffalo, ii) there is no a structural difference between cow and buffalo in terms of milk production in the study area, iii) The marginal value productivity has been unity for all inputs in the cases of both cow and buffalo and iv) there is no difference among the channel-I channel-II and channel-III in terms of marketing efficiency in the study area.

In Madurai district, there are 13 blocks namely Alanganallur, Chellampatti, Kallikudi, Madurai East, Madurai West, Melur, Sedapatti, Kottampatti, Thiruparamkundram, Thirumangalam, T.Kallupatti, Usilampatti and Vadipatti. Among the 13 blocks, Madurai East with the largest number of cows and buffalos in Madurai district, has been selected for the study. There are 39 panchayat villages in Madurai East. The 39 villages are arranged in a descending order in terms of the total number of cows and buffalos and first twenty villages have been selected for the data collection. Due to non-availability of number of milk producers in the selected block as sample is based on total population of cow and buffalo in the respective block. That is, total cow and buffalo population has been taken as a proxy for number of milk producers. The total cow and buffalo population in Madurai East has been nearly thirty thousand. Therefore, the proportionate simple random sampling has been used to select a sample of 300 forming one per cent of the total population from the selected block.
The study is based on both primary and secondary data. The primary data were collected from the milk producers, milk agents and the consumers of milk in Madurai District. Thus the primary data comprise demographic variables, number of animals, herd size, details of milk yield, cost components of milk production, procurement price, marketed surplus of milk, channels of marketing of milk and the other relevant issues thereto. The secondary data were collected from books, journals, newspapers and reports. The appropriate and secondary data were also collected from Madurai District Co-operative Milk Producers’ Union, Co-operative Societies, Corporate Bodies, and Office of the Animal Husbandry in Chennai, Office of the Assistant Director of Animal Husbandry in Madurai, District Collectorate and Statistical Information Centre in Madurai. The field survey was conducted during the months of December 2010 to March 2011.

The structural schedules were administered through personal interview method extending to 300 milk producers, 200 milk agents and 300 milk consumers. Simple random sampling technique has been adopted for collecting data from 200 milk agents and 300 milk consumers.

The data collected were subjected to functional and costs analysis. The determinants of milk yield were studied by using the Cobb-Douglas production function, the structural differences of milk yield between cows and buffaloes by using the Chow’s
Test, Break-even analysis and resource-use efficiency of inputs by testing the marginal value productivity against unity.

In the case of marketing of milk, marketing cost, margin, price-spread and the efficiency of marketing for various channels of milk distribution were arrived at by using the Shephard’s method, Acharya’s and Aggarwal’s method. The multiple linear regression models were used to interpret the marketed surplus of milk and determinants of milk production. Semi-log model has been used to measure compound growth rate of crucial variables. Correlation co-efficient was adopted to find the relationship between family size, family income and average family consumption.

7.1.1 MAJOR FINDINGS OF THE STUDY

7.1.1.1 Findings relating to Growth Performance

Milk production in India has been continuously increasing over time. A steady increase in milk production is found while comparing the period from 1950-51 to 2009-10. The volume of milk production in India has increased from 17 million tonnes in 1950-1951 to 116 million tonnes in 2010-11. It is noted that it has increased for nearly seven times in 60 year period (1950-51 to 2010-11).

The growth of milk production in India has increased gradually from 1.64 percent per annum in 1951-61 to 4.51 per cent in 1974-1981. It is observed that there has been a fall in the growth of milk production from 5.48 per cent in the mild-liberalization period
1981-91 to 4.11 per cent during the period 1991-2001 and again decreased gradually to 3.77 per cent during the period 2001-10.

The growth rate of milk production in India has increased gradually from 2.91 percent per annum during Fifth plan to 6.42 per cent during Sixth plan period. It is observed that there has been a fall in the growth of milk production from Seventh plan onwards. It has been 4.41 per cent in the Eight plan period 1992-97 to 4.08 per cent during the Ninth plan period and again decreased gradually to 3.64 per cent during the Tenth plan period.

Uttar Pradesh which recorded the highest contribution of the India’ total milk production during the study period. One fifth of total output of milk in India has been accounted for by the state of Uttar Pradesh during 1991-92 and also subsequent periods. Andhra Pradesh has been recorded 9.26 per cent, followed by Rajasthan (8.48 per cent) and Punjab (8.34 per cent) in the relative contribution of total milk production in Indian manufacturing during 2009-10. Increasing trend has observed in the state of Andhra Pradesh, Bihar, Gujarat and Madhya Pradesh during 2009-10 compared to the year 2001-02. The decreasing trend has been found in the states of Haryana and West Bengal over the period.

It has been noticed that the milk production grew significantly 3.95 per cent per annum during 1991-2010. All the 12 states attained positive growth of milk production yet substantial variations in growth of milk production has been noticed. It is
worth mentioning here that milk production grew at an alarming rate of 7.49 per cent per annum in the state of Andhra Pradesh followed by Gujarat 5.11 per annum, Uttar Pradesh (3.92 per cent per annum) and industrially forward state of Maharashtra (3.67 per cent per annum). Growth of milk production in Tamil Nadu had been 2.56 per cent per annum during the study period 1991-2010.

The growth of milk production recorded at the rate of 4.31 per cent per annum in India during the period 1991-2001. The states Andhra Pradesh, Gujarat, Karnataka, Maharashtra, Punjab and Rajasthan realised the growth of milk production which was higher than that of all-India. The highest growth rate of milk production has been in the state of Karnataka (7.41 per cent per annum) followed by Andhra Pradesh (6.96 per cent per annum) and Rajasthan (6.15 per cent per annum) during the period.

The comparative analysis of growth pattern of milk production between the periods 1991-2001 and 2001-2010 reflects that phenomenon of growth of milk production which was found to more pronounced in the 1990s. The rate of growth of milk production in all –India was to be 4.31 per cent per annum during the period 1991-2001 against 3.87 per cent per annum during the period 2001-2010. The milk production in the state of Bihar grew at an alarming rate of 12.08 per cent per annum during 2001-2010 relative to -0.62 per cent per annum during the first sub period. The better performance in terms of growth of milk production had been attained by the states
Andhra Pradesh, Bihar, Gujarat, Madhya Pradesh, Uttar Pradesh during the period 2001-2010.

The volume of milk production in Tamil Nadu increased from 3375 thousand tonnes in 1990-91 to 4998 thousand tonnes in 2000-01, and it went up to 5778 thousand tonnes in 2009-10. Regarding total milk production, it has increased more than one and half times in 10 year period (1990-91 to 2000-01) and increased to 1.7 times in 20 year period (1990-91 to 2009-10).

Salem and Erode districts have recorded highest contribution of the Tamil Nadu’s total milk production during the study period. One third of total output of milk in Tamil Nadu has been accounted by the districts Vilupuram, Vellore, Thiruvannamalai, Salem, Coimbatore and Erode during 2000-09 and also sub-periods.

Erode has recorded 5.95 per cent, followed by Salem (5.94 per cent) and Vellore (5.91 per cent) in the relative contribution of total milk production in Tamil Nadu during 2000-09. Salem registered 3.52 per cent and 4.53 per cent during 2000-01 and 2004-05 respectively but it has been the largest district which contributes 7.67 per cent in total output during 2008.09. Increasing trend has been observed in the state of Andhra Pradesh, Bihar, Gujarat and Madhya Pradesh during 2009-10 compared to the year 2001-02. The increasing trend has been found in the districts of Salem, tirunelveli, vilupuram and virudhunagar over the period.
The rate of growth of milk production in Tamil Nadu has been found to be 2.87 per cent per annum during the period 2001-2010. The milk production in the district of Salem grew at an alarming rate of 14.28 per cent per annum followed by Virudhunagar at the rate of 12.28 per cent and Tirunelveli at the rate of 9.64 per cent per annum during the period. On the other hand, growth of milk production in the districts Kanchipuram, Thiruvallur, Cuddalore, Pudukottai, Madurai, Theni and Ramanathapuram has been found to be negative.

7.1.1.2 Findings relating to Cost and Returns Structure

The average lactation period for cow is 258.12 days and 286.27 days for buffalo; whereas the average dry period for cow is 173.24 days and 186.31 days for buffalo. The inter-calving period for cow is found to be 431.36 days and 472.58 days for buffalo. The total milk yield during the lactation period for cow is 2220.78 litres and 1998.45 litres for buffalo.

The average milk yield per day during the lactation period for cow was 8.60 litres and 6.98 litres for buffalo. The milk yield per day during inter-calving period for cow is 5.14 litres and 4.22 litres for buffalo. The study reveals that cow’s yield of milk is higher than the buffalo’s yield of milk.

The total cost of milk production per cow during lactation period was Rs. 17545.41 and during inter-calving period was Rs. 24124.17. The total variable cost includes the feed cost, maintenance cost and miscellaneous cost. The total feed cost per
cow during lactation period is Rs. 11723.36 and Rs.16236.22 during inter-calving period. The total maintenance cost during lactation period is Rs. 2735.58 and Rs. 3703.63 during inter-calving period. The miscellaneous cost during lactation period is Rs. 151.00 and Rs.204 during inter-calving period. Depreciation on fixed cost during lactation period amounted to Rs. 1503.00 and Rs. 2036.70 during inter-calving period; the depreciation on cattle shed during lactation period is Rs. 229.50 and Rs. 312.07 during inter-calving period and the interest on fixed cost during lactation period is Rs. 1631.55 and Rs.1087.70 during inter-calving period.

The total cost of milk production per buffalo during lactation period is Rs.19023.93 and Rs.24754.99 during inter-calving period. The total fixed cost per buffalo during lactation period is Rs.3246.11 and Rs.4192.69 during inter-calving period. The total variable cost during lactation period is Rs.15777.82 and Rs.20562.30 during inter-calving period. Total feed cost per buffalo amounting to Rs.12635.81 during lactation period and Rs.16252.68 during inter-calving period; the total maintenance cost during lactation period is Rs.2984.01 and Rs.4092.62 during inter-calving period and the miscellaneous cost during lactation period is Rs.158 and Rs.217 during inter-calving period. Total depreciation cost per buffalo on fixed cost during lactation period amounts to Rs.1769.98 and Rs.2277.12 during inter-calving period and the depreciation on cattle shed during lactation period is Rs.229.50 and Rs.312.07 during inter-calving period; and
interest on fixed cost during lactation period is Rs.1246.63 and Rs. 1603.50 during inter-calving period.

The income earned from dung per cow during lactation period is Rs. 828.00 and Rs. 1122.00 during inter-calving period. But the income earned from dung per buffalo during lactation period is Rs. 1033.50 and Rs.1604.17 during inter-calving period. The net cost of milk production per cow during lactation period is Rs. 16717.44 and Rs. 23002.17 during inter-calving period. But the net cost of milk production per buffalo during lactation period is Rs.17990.43 and Rs.23150.82 during inter-calving period.

The average milk production is 2220.78 litres per cow and 1998.45 litres per buffalo. The cost of milk production per litre for cow during lactation period is Rs.7.53 and Rs.10.35 during inter-calving period while the cost of milk production per litre for buffalo during lactation period is Rs. 9.00 and Rs.11.58 during inter-calving period.

The average total cost of milk production per litre for cow during lactation period Rs.7.90 and Rs.10.86 during inter-calving period. The average variable cost per litre during lactation period is Rs.6.54 and Rs.9.05 during inter-calving period.

The average feed cost per litre for cow during lactation period is Rs.5.28 and Rs.7.28 during inter-calving period. The average maintenance cost during lactation period is Re.1.22 and Rs.1.68 during inter-calving period. The miscellaneous cost during
lactation period is Re.0.07 and Re.0.09 during inter-calving period. The average fixed cost of depreciation on fixed cost per litre during lactation period stands at Re. 0.68 and Re. 0.92 during inter-calving period; the depreciation on cattle shed during lactation period is Re. 0.10 and Re.0.14 during inter-calving period and interest on fixed cost during lactation period stands at Re. 0.54 and Re. 0.73 during inter-calving period.

The average cost of milk production per litre for buffalo during lactation period is Rs.9.51 and Rs.12.38 during inter-calving period. The average fixed cost per litre during lactation period is Rs.1.62 and Rs.2.10 during inter-calving period. The average variable cost during lactation period is Rs.7.89 and Rs.10.29 during inter-calving period.

The average variable cost per litre which includes the average feed cost during lactation period is Rs.6.31 and Rs.8.13 during inter-calving period; the average maintenance cost during lactation period is Re. 1.51 and Rs. 2.05 during inter-calving period; and miscellaneous cost during lactation period is Re.0.08 and Re.0.11 during inter-calving period.

The average cost of depreciation on fixed cost per litre for buffalo during lactation period is Re. 0.89 and Re. 1.14 during inter-calving period; the depreciation on cattle shed during lactation period is Re. 0.11 and Re.0.16 during inter-calving period and interest on fixed cost during lactation period is Re.0.62 and Re.0.80 during inter-calving period.
The income earned from dung per cow per litre during lactation period is Re.0.37 and Re.0.51 during inter-calving period whereas the income earned from dung per buffalo per litre during lactation period is Re.0.52 and Re.0.80 during inter-calving period.

The average net cost of milk production per cow per litre during lactation period is Rs. 7.52 and Rs. 10.35 during inter-calving period. But the average net cost of milk production per buffalo per litre during lactation period is Rs. 9.00 and Rs. 11.58 during inter-calving period.

According to the cost and returns per milch animal during lactation period, it is observed that the quantum of milk in litres for cow is 2220.78 and for buffalo is 1998.45 litres. The value of milk for cow is Rs. 32201.31 and Rs. 32974.43 for buffalo. The value of dung for cow is Rs. 828.00 and for buffalo is Rs. 1033.50.

The gross returns of cow are Rs. 33029.31 and Rs. 34007.93 for buffalo. The net returns over variable cost are Rs. 18420.31 for cow and Rs. 18230.11 for buffalo. Whereas, the net returns over total cost is Rs. 15483.90 for cow and Rs. 14983.18 for buffalo.

The rate of returns by the ratio of gross returns to variable cost is higher in the case of buffalo (2.15) while it is lower (1.20) in the case of cows. The ratio of gross returns to total cost for cows is 1.88 and a buffalo is 1.78 during the lactation period.
On the basis of the cost and returns per milch animal during inter-calving period, the study reveals that the quantum of milk in litres for cow is 2220.78 litres and for buffalo it is 1998.45 litres. The value of milk is Rs.32201.31 for cow and Rs.32974.43 for buffalo. And the value of dung is observed to be Rs.1122 for cow and Rs.1604.17 for buffalo. The gross returns for cow are observed to be Rs. 33323.31 and Rs. 34578.60 for buffalo. The net returns over variable cost for cow are Rs. 13179.46 and Rs. 14016.3 for buffalo and the net returns over total cost for cow are Rs. 9199.14 and Rs. 9823.61 for buffalo during inter-calving period.

It is interesting to note that the ratio of gross returns to variable cost has been more or less same in the cases of cow and buffalo during inter-calving period in the study area and also ratio of gross returns to total cost has been more or less same in the cases of cow and buffalo.

The break-even for cow and buffalo is 370.17 litres and 377.01 litres respectively. The break-even sales volume of cow during lactation period are Rs.5367.46 and buffalo is Rs.6220.66. The profit volume ratio of cow and buffalo during lactation period is 54.68 per cent and 52.18 per cent respectively. And the margin of safety is 83.30 per cent for cow and 81.13 per cent for buffalo. Thus, the percentage of break-even output to total output for cow is 16.67 per cent and for buffalo is 18.86 per cent.

The profit per unit during lactation period of cow is Rs.6.61 and of buffalo is Rs.6.99. The contribution per unit is Rs.7.93 for cow and Rs.8.61 for buffalo. The average
selling price per unit of cow and buffalo is Rs.14.50 for cow and Rs.16.50 respectively. The study reveals that the profit volume ratio and break-even sales are more or less the same in the case of cow and buffalo.

It is observed that the break-even output of cow and buffalo has been 731.67 litres and 675.15 litres respectively. The break-even sales volumes of cow and buffalo have been found to be is Rs.10609.22 and Rs.11140.00 respectively.

The profit volume ratio during inter-calving period has been 37.50 per cent in cow and 37.63 per cent in buffalo. It is observed that the margin of safety for cow and buffalo has been 67.05 per cent and 66.22 per cent respectively. Therefore, the percentage of break-even output to total output has been 32.95 per cent for cow and 33.78 per cent for buffalo.

The profit per unit during inter-calving period is Rs. 3.65 for cow and Rs.4.11 for buffalo. The contribution per unit is Rs.5.44 for cow and Rs.6.21 for buffalo. The average selling price per unit is Rs.14.50 for cow and Rs.16.50 for buffalo. The study reveals that the profit volume ratio and break-even sales are more or less the same in the case of cow and buffalo in the study area.

It is observed that green fodder, dry fodder, concentrates and maintenance cost are statistically significant at 5 per cent level and they are positively related to yield of milk
production in the cases of cow and buffalo indicating that there is scope for increasing production of milk by increasing the use of inputs.

It is found that one per cent increase in green fodder, dry fodder; concentrates and maintenance cost may lead to 0.2345, 0.2026, 0.2591 and 0.2748 in increase in yield of milk respectively in the Case of cow. It is observed that one per cent increase in green fodder, dry fodder, concentrates and maintenance cost may lead to 0.1725, 0.2648, 0.2040 and 0.4072 in increase in yield of milk respectively in the Case of buffalo.

It is also observed that one per cent increase in green fodder, dry fodder, concentrates and maintenance cost may lead to 0.2543, 0.2424, 0.15645 and 0.1538 in increase in yield of milk respectively in the pooled category.

In the cases of cow, buffalo and pooled, the returns to scale shows that the production of milk is expected to increase 0.97, 1.05 and 0.81 per cent respectively when all the inputs increased simultaneously by one per cent. It is observed that constant returns scale has been found in the cases of cow and buffalo. Thus, the first hypothesis that constant returns scale prevailed in dairying in Madurai district for both cow and buffalo has been accepted.
The marginal value productivity has been found greater than unity for all inputs in the case of both cow and buffalo. This indicates that over utilisation of these inputs in the study area. It is suggested that employment of these resources should be decreased till the ratio becomes unity.

The second hypothesis that there is no a structural difference between cow and buffalo in terms of milk production in the study area has been rejected in favour of alternative hypothesis that there exists a structural difference between cow and buffalo in terms of milk production in the study area using Chow’s test.

7.1.1.3 Findings relating to Marketing

It is observed that 93 per cent of the consumers prefer to consume cows milk, three per cent consumers prefer buffalo milk and two per cent consume both. The study has found that most of the consumers prefer cows milk and 49 per cent of the consumers prefer to buy milk in its loose form, 38 per cent prefer milk in sachet and 13 per cent accept both.

It is found that 147 consumers out of 300 prefer to consume other variety (that is Loose Milk) and it ranks first. One hundred and ten consumers prefer to consume standardised milk which ranks second. Super thick milk, Premium milk and Toned milk are consumed by 16, 12 and 11 consumers and it holds third, fourth and fifth rank respectively. Double tonned milk is occupying the last position place.
It is observed that 117 consumers are aware of the particular brand of milk individually. The category ‘Individual’ ranks first. ‘Friends’ and ‘Advertisements’ rank second and third respectively and the category ‘Relatives’ ranks fourth.

Consumer has to pay a price of Rs.22 for one litre of milk in channel-I. The producer received Rs.14.50 which accounts for 65.90 per cent of the consumer rupee. The cost of milk is Rs.17.90 (81.36 per cent). Among the costs transport cost and miscellaneous costs account for 5.86 per cent and 6.64 per cent of the consumer rupee respectively. The milk vendor earns a margin of Rs.4.10 which accounts for 18.63 per cent of the consumer rupee.

It concludes that the milk vendor earns the highest margin of Rs.4.10 when compared with other two channels comprising milk Producer-milk producers’ co-operative society-madurai district co-operative milk producers’ Union-Agent-consumer in channel-II and Milk producer-corporate body-Agent-Consumer in channel-III.

The price paid by the milk producers’ union is Rs.15.50 (59.61 per cent of the selling price of Rs.26) and the producer’s union receives Rs.16.00 (61.54 per cent of the selling price).

In milk producers union, the cost of milk per litre is Rs.24.25 (93.26 per cent of selling price) and the procurement price is Rs.16.00 (61.65 per cent). The various costs incurred in the processing of milk from the milk producers’ union to milk consumers are the cost of processing, selling and distribution, administration and packaging which reach
4.08, 4.81, 5.38 and 3.85 per cent of selling price respectively. The margin received by the milk producers union has been Rs1.80 (6.92 per cent of selling price).

It is found that the cost of milk is Rs.24.14 in channel-III (89 per cent of the selling price of Rs.27.00) and the procurement price of the corporate bodies are Rs.15.00 (55.56 per cent of selling price). The various major costs incurred in the processing and marketing of milk have been found to be commission to the selling agent of Re.3.00 (11.11 per cent), selling and distribution cost of Rs.1.22 (4.52 per cent), administrative expenditure of Re.0.95 (3.52 per cent) procurement cost of Re.0.75 (2.78 per cent) and packaging cost of Re. 1.05 (3.89 per cent). The corporate bodies earn a margin of Rs.2.86 which account for 10.59 per cent of the selling price.

In channel-I the producer’s price is Rs.14.50 (65.90 per cent) per litre, marketing margin is Rs.4.10 (18.63 per cent) and marketing cost is Rs.3.40 which accounts for 15.45 per cent of the selling price (Rs.22). Thus, the price-spread is Rs.7.50 (34.09 per cent). In channel-II the producer’s price is Rs.15.50 (59.61 per cent of selling price) per litre, marketing is Rs.1.80 (6.92 per cent) and marketing cost is 8.67 which accounts for 35.10 per cent of the selling price Rs.26. Thus, the price-spread is Rs.10.50 (40.38 per cent). In channel-III the producer’s price is Rs.15.00 (55.56 per cent of selling price) per litre, marketing margin is Rs.2.86 (10.59 per cent) and marketing cost is Rs.9.14 which accounts for 33.86 per cent of the selling price (Rs.27). Thus, the price-spread is the highest at Rs.12.00 (44.44 per cent) in channel-III.
The producers price and the marketing margin is the highest in channel-I and hence the channel-I has least price-spread of Rs.7.50. Therefore, channel-I is more efficient compared with channel-II and channel-III.

It is inferred that the production is 44.26 litres and the consumption is 1.54 litres for large herd size thereby creating a higher marketed surplus of 42.72 litres. Whereas in the case of medium herd size, the production is 18.02 litres, the consumption is 1.23 litres and the marketed surplus is 16.79 litres. And, in the case of small herd size, the production is 9.23 litres, the consumption is 1.03 litres and the marketed surplus is 8.20 litres lower than the other two herd size. Therefore, it is observed that the large category of herd size have the highest marketed surplus because of high production and low family consumption.

The factors namely milk production ($X_1$), education and herd size ($X_3$) of the households exhibit positive relationships with marketed surplus for all the herd sizes, whereas family size ($X_2$) exhibits negative relationship with marketed surplus for small and medium herd size. This is due to the fact that education and herd size motivate the producers to shift from subsistence farming to commercial farming. Negative relationship was found between family size ($X_3$) and marketed surplus and this confirms to the postulation of indirect relationship between family size and marketed surplus.

7.1.1.4 SUGGESTIONS

1. Growth of milk production in the following districts Kanchipuram, Thiruvallur, Cuddalore, Pudukottai, Madurai, Theni and Ramanathapuram has been found to
be negative. It is suggested that there is a need to improve milk production in those
districts either by offering incentives or by providing credit facilities to the milk
producers.

2. The marginal value productivity has been found greater than unity for all inputs
in the case of both cow and buffalo. This indicates over utilisation of these inputs
in the study area. The department of animal husbandry has to organise
awareness programmes relating to the requirement of inputs level to the milk
producers in the study area. In other words, it is suggested that employment of
these resources should be decreased till the ratio becomes unity.

3. Madurai district is having a very good atmosphere for the trade of milk sweets.
Therefore, government should take necessary steps for creating favourable
environment for making milk sweets to the producers in the study area. It will
create additional employment in the industrially backward district of Madurai.

4. Development of efficient milk collecting centres with proper cooling facilities and
transportation networks at farmers level by co-operative and private dairy plants,
would help strengthen the linkages between dairy farmers and dairy industry.

5. The dairy plants should utilise the full plant capacity to reduce costs on
processing and manufacturing of their products.
6. The old machinery and equipments should be replaced to reduce cost of repairs and maintenance.

7. Quality control of dairy products should be evolved.

8. The product mix should be reoriented as per the changing market environment and superfluous expenses should be avoided.

9. Consumer oriented market research and development should be accorded higher attention.

7.1.1.5 CONCLUSION

The study has done its best to highlight the pros and cons of milk production and marketing. The proper use of advanced technology has far-reaching effects. The attention of the authorities and agricultural exports to drawn in to the labyrinthine plight and whirlpool struggles is the farmers, staring at the barrel of abject poverty in the absence of redemption. The farmer need to be provided with better alternative avenues of employment and earnings. They should be actively lifted out of centuries of uneven struggle against marauding poverty and despondency leading to even suicides. Ways and means should be found to maintain a steady increased production and
marketed surplus. The study has gone into emerging trends in the marketing of milk. The suggestions offered at the end of the thesis could go a long way to show an outlet for the gradual uplift of the financial plight of the small and marginal farmers. Success in farming will provide the necessary boost to the agricultural industry that can contribute to the vast changes in the length and breadth of the rural India.

If proper efforts are undertaken to bring into practice, some of the breaking grounds hinted at by the present researcher and the motivation behind its writing would have been amply rewarded.

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