CHAPTER - VII

IMPACTS OF DAIRY CO-OPERATIVES

The previous chapter analysed the economics of dairy farming in Idukki district. The present chapter looks at the economic impacts of dairy co-operatives in the district particularly on supply of inputs, production and consumption of milk, creation of employment, generation of regular and higher income and improvement in the standard of living of the dairy farmers.

7.1.1 Supply of Inputs

Efficiency and profitability of dairy farming depends on the regular availability of required inputs at reasonable rates. Dairy co-operatives can provide various inputs such as cattle feed, green fodder, fodder seeds, veterinary facilities, artificial insemination facilities, vitamines, minerals, loan facilities and so on to the farmers.

7.1.2 Cattle Feed

It has been found in the study that dairy co-operatives provide either Milma feed or other feeds produced by private companies. Among the societies surveyed, Anakkara society was found to produce its own cattle feed and to market it in 10 kg.bags. The 10 kg.bags are highly preferred by small farmers because majority of the

farmers find it very difficult to buy cattle feed of 45 kg. bags produced by private agencies. Ellackal society, another society surveyed, also reported that it would be able to supply its own cattle feed within one year. Construction of its cattle feed plant is going on. About 70 percent of the farmers are of the view that cattle feed provided by dairy co-operatives are superior to those provided by private agencies. It is not only superior in quality but also cheaper by about 25 paise per kg. The details of purchase of compounded cattle feed by farmers are given in table 7.1

Table 7.1

Purchase of Compounded Cattle Feed

Sl.No.	Source	Number of farmers	Percentage of farmers
(1)	(2)	(3)	(4)
1.	Dairy co-operatives	158	63.2
2.	Near-by markets	76	30.4
3.	Other places	16	6.4
	Total	250	100.0

Source: Sample Survey.

Table 7.1 shows that 63.2 percent of farmers purchase compounded cattle feed from the dairy co-operatives. About 30.4 percent of farmers purchase it from the near-by markets and the remaining 6.4 percent from Tamil Nadu, especially from Cumbum. It has been calculated that a 25 paise price reduction per kg. of compounded cattle feed contributes to a cost reduction of Rs.10553 for the sample milch animals during the lactation period. There is every possibility of reducing the cost of compounded cattle feed by Rs.16697, if all the farmers belonging to the dairy co-operatives buy their entire requirements of cattle feed from the society. Irregular supply of feed, lack of loan facility and absence of retail sales or small bags are the main reasons for many farmers not buying feed from the society.

7.1.3 Green Fodder

Certain well developed societies cultivate green fodder with financial assistance from the Dairy Development Department. The fodder so grown are sold to farmers at reasonable prices. The fodder made available by the society is of great help to farmers during the summer season. Similarly, all the societies supply fodder seeds at subsidised rates. It has been found in the study that about 50 percent of farmers cultivate fodder using the fodder seeds supplied by dairy co-operatives. By cultivating the fodder seeds provided by dairy co-operatives, the sample farmers together

produce an average quantity of 1,09,900 kg. of green fodder worth Rs.54,950 during the lactation period.[1]

7.1.4 Animal Treatment

Animal treatment, together with artificial insemination facilities, is of great help to dairy farmers. Dairy farmers belonging to co-operatives get expert veterinary treatment in emergency cases at their own door-steps for a nominal fee of Rs.35. The corresponding expense for getting the same service from Government Veterinary doctors is about Rs.200. It is found in the study that an average number of 54 emergency cases arise every year per 100 sample households. About 60 percent of the treatment is given by Union veterinary doctors. All sample households together get an average benefit of Rs.12,735 per year by way of the cost difference between the treatment by Government veterinary doctors and Union veterinary doctors. If all members of dairy co-operatives depend on Union veterinary doctors for emergency animal treatment, the cost difference can be raised to Rs.21,172 per year. But delay and inefficiency, especially in recent years compell farmers to depend on other sources of animal treatment.

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1. The calculation is based on milch animals alone.

7.1.5 Artificial Insemination

In the field of artificial insemination too dairy co-operatives play an important role. About 30 percent of inseminations are done by dairy co-operatives. Though artificial insemination by society is comparatively expensive, it is more convenient to farmers because the society is within the easy reach of the farmers. The average distance to the society is only 1.9 km, while the Government veterinary hospital is located at a distance of 4.3 km. Average number of service for conception too is marginally lower in the case of societies.

7.1.6 Credit

Almost all societies provide cattle feed, minerals and vitamins on credit basis to the farmers and this enables them to give sufficient quantity of such inputs in proper time to their animals. The cost of these inputs are taken back from the milk price of the farmers. Though certain societies in collaboration with banks provide loan facilities to farmers, this service is found to be inadequate.

7.2 Changes in Milk Production

Supply of inputs to dairy farmers by the co-operatives has greatly influenced milk production. Besides this, assured market and regular payment by co-operatives also motivated farmers to

increase milk production. Before the establishment of dairy co-operatives, dairy farming in the district was mainly to cater for domestic consumption. But today dairy farming is a truly commercialised activity and domestic consumption forms only a very small part. Co-operatives have induced dairy farmers not only to increase bovine holdings of the family but also to change the structure of bovine in favour of more cross-breds. A comparative analysis of changes in bovine holding, productivity and production during the span of five years from 1988 to 1993, both under the society and non-society areas makes the impacts of dairy co-operatives on milk production clear. This is given in table 7.2

Table 7.2

Changes in Bovine Holdings, Productivity and Production of Milk during the Span of Five Years

Sl.No.	Description	Society area			Non-society area		
		1988	1993	Percentage change	1988	1993	Percentage change
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Bovine per family	2.64	3.46	31.1	2.87	3.36	17.1
2.	Productivity (litre)	4.10	5.79	41.2	3.29	3.84	16.7
3.	Production during lactation period (litres)	1378	1949	41.4	1205	1410	17.0

Source: Sample Survey.

Table 7.2 shows that farmers in the society area are not only far better in all variables given above but also the percentage change in these variables during the five year period is about 100 percent higher among them. While the percentage change during the last five years among the farmers in the society area was 31.1 percent in the case of bovine holding per family, 41.2 percent in productivity and 41.4 percent in production during the lactation period, the corresponding figures were only 17.1 percent, 16.7 percent and 17 percent respectively for farmers in the non-society area.

7.3 Better Marketing

Better marketing facility is a pre-condition for efficient and scientific dairy farming. An important factor behind the widespread adoption of dairy farming in the district is the creation of sufficient marketing facilities by the dairy co-operatives. Before the establishment of dairy co-operatives, dairy farmers of the district had to depend on the mercy of local vendors and tea-shop owners for selling their milk. They exploited the farmers by giving only very low price and that was too not with regularity. This had created too much hardships to dairy farmers.

It has been found in the study that about 78 percent of marketed milk is sold to dairy co-operatives in the district. About 14 percent of this milk is sold locally. The remaining 64 percent

is sent to distant chilling plants to be marketed in other areas. This means that dairy co-operatives created a major share of market for milk, absorbing about 930 litres of milk per day from the sample households. In other words dairy co-operatives created market for about 3.3 lakh litres of milk per year for the sample households. As the major share of market for milk in the district is created by dairy co-operatives, their absence would have meant curtailment of dairying in the district perhaps to about one third of the present level.

7.4 Generation of Regular and Higher Income

Majority of the dairy farmers being very poor, follow dairying mainly for their livelihood. What they want from dairying is to get a stable income. As seen in the previous chapter, even if the price is slightly lower, the farmers seemed to like regular payment, preferably once in every week. It is important to note here that the main reason for the farmers joining dairy co-operatives was to realise regular payment. This is evident from table 7.3

Table 7.3

Perceived Reasons for Joining the Dairy Co-operatives

(Response of members)

Sl.No.	Reason	Number	Percentage
(1)	(2)	(3)	(4)
1.	Availability of regular payment	121	48.4
2.	Unlimited intake of milk by societies	73	29.2
3.	Lack of other marketing channels	29	11.6
4.	Availability of free veterinary services	16	6.4
5.	Availability of bonus	4	1.6
6.	Other reasons	7	2.8

Source: Sample Survey.

Table 7.3 shows that 48.4 percent of farmers joined dairy co-operatives mainly because of regular payment. While 29.2 percent joined because of the facility of selling any quantity of milk, 11.6 percent joined because of lack of other marketing channels. Other reasons include political motives, proximity of the society, personal relations with Board members or society employees and so on.

Ready market, remunerative price and regular payment are crucial for dairying. In addition to the creation of ready market

and regular payment, dairy co-operatives provide more or less remunerative prices. It is true that price paid by dairy co-operatives is slightly lower than the price paid by local consumers and tea-shop / hotel owners. But when the value of inputs given by co-operatives is considered this price difference is only immaterial. Again it is the presence of dairy co-operatives which prompts the private agencies to offer higher prices. The private agencies offer higher prices inorder to attract milk producers to these agencies.

The presence of dairy co-operatives has induced other agencies not only to give high price but also to make regular payment. About 80 percent of payment by co-operatives is paid weekly. This regular payment by societies induces other agencies too to make regular payment. A comparative picture of average price of milk, mode of payment and dairy income would make the impact of co-operatives more clear. This is given in table 7.4

Table 7.4

Price, Mode of Payment and Dairy Income in Society and Non-society Areas

Sl.No.	Description	Society area (Members)	Non-society area (Non-members)	Percentage difference
(1)	(2)	(3)	(4)	(5)
1.	Price per litre	6.80	4.39	54.90
2.	Percentage of regular payment	93.94	66.25	41.80
3.	Average marketed milk per day per sample household (litres)	5.53	3.20	72.81
4.	Average dairy income per day (Rs)	37.60	14.05	167.62
5.	Gross dairy income during lactation period (Rs)	12641	5159	145.03
6.	Regularly received income	11875	3418	247.43

Source: Sample Survey.

It is evident from table 7.4 that farmers in society area are far better in all respects. They get about 55 percent higher price than that received by non-members. While members get about 94 percent of milk-price regularly, the corresponding figure is only 66.25 percent for non-members. Because of the absence of

ready market for milk, insufficient price and irregular payment, marketed milk among the non-members is comparatively much lower in quantity. While marketed milk is 5.53 litres for the members of dairy co-operatives, it is only 3.2 litres for the non-members. Low marketed surplus together with low price results in low dairy income. While the gross dairy income of members is Rs.12,641 during lactation period, it is only Rs.5,159 for non-members. This means that gross dairy income of members is about 145 percent higher than that of non-members. Still greater difference exists in the case of regularly received income. While the regularly received income of the members is Rs.11,875 during lactation period, it is only Rs.3,418 for non-members. Thus the regularly received dairy income of non-members constitutes only 28.78 percent of that of members of dairy co-operatives.

Besides this, members of dairy co-operatives who sell milk to societies get a part of the profit of the societies in the form of bonus every year. It has been found in the study that members received an average bonus of Rs.143 during 1993. This means that the sample members of the societies,as a whole, get an average bonus of Rs.35,750 per year.

A comparative analysis of changes in milk price and gross milk income during the last five years (1988-1993) among the members and non-members of dairy co-operatives shows that members of dairy co-operatives are better placed than non-members. While milk-price

per litre during the last five years increased by 56.3 percent for members, the corresponding increase was only 29.1 percent for non-members. Similarly, the gross milk income of members of co-operatives increased by about 121 percent during the last five years, whereas the increase was only by 51 percent for the non-members.

7.5 Generation of Interest in Commercialised Dairying

By providing the necessary infrastructure for dairying, dairy co-operatives have attracted many, especially small and marginal farmers to dairying. More and more farmers are coming forward to the field of dairying. If dairy farming in the district was mainly for domestic consumption of milk before the introduction of dairy co-operatives, now especially in the high ranges of the district, it is purely for selling to the market. Farmers had to go to distant towns for marketing their milk before the development of dairy co-operatives. Now co-operatives are available within 3 kms, and they are ready to purchase the entire milk offered by farmers, and assure ready market throughout the year. An analysis of trends in the milch animal holdings during the last five years (1988-1993), both among members of dairy co-operatives and non-members, shows that while the percentage increase in the number of animals in milk among the members of dairy co-operatives was 43 percent, it was only about 20 percent among the non-members.

The growing interest in commercial dairying has created far reaching results not only in milk production and income but also in employment generation, milk consumption, standard of living, self-confidence, and in agricultural production resulting from increased availability of cowdung which is commonly used as manure in the district.

7.6 Employment Generation

Dairy co-operatives, by creating new interest in commercial dairying have also generated substantial employment opportunities in the district. Infact, dairying is a good panacea for the crucial problem of seasonal and disguised unemployment in the agricultural sector. Considering the special geographical and climatic conditions of the district, it could be said, dairying is one of the best employment generating programmes. Dairying generates employment at the doors of the farmers and as such farmers are not required to go to distant places in search of employment opportunities.

Generation of employment at the doors of the farmers has a number of advantages. Firstly, farmers need not spend on transport to reach the working place and to return home. Secondly, they need not spend time and energy to reach the working place. Thirdly, farmers get enough time to do household works. Fourthly, farmers, especially mothers get sufficient time for child caring.

Fifthly, all the members of the family together can do the work related to dairying. Lastly, it promotes hardworking habit among the members of the family because the more they work hard, the more will be the milk production and income.

It has been found in the study that dairying creats an employment of 1.97 hours per bovine per family. As the sample households have 3.46 bovines per family, dairying generates an employment of 6.82 hours per day. The details of employment generation in dairying is given in table 7.5

Table 7.5

Employment Generation in Dairying per Sample Household

Sl.No.	Description	Minutes	Percentage of time
(1)	(2)	(3)	(4)
1.	Fodder collection	202	49.39
2.	Feeding	60	14.67
3.	Milking	27	6.60
4.	Marketing	62	15.16
5.	Bathing	20	4.89
6.	Cleaning	20	4.89
7.	Others	18	4.40
8.	Total	409	100.00

Source: Sample Survey.

Table 7.5 shows that dairying generates a total employment of 409 minutes (6.82 hours) per day per family. Of this, 49.39 percent is generated in fodder collection. Marketing and feeding come second and third respectively in the generation of employment.

Analysing the employment creation in dairying in terms of full-time work per sample household in a year, it can be seen that it creates an average of 311.16 days of employment. The total employment created in dairying per year for the cample households together is 77,790 days. Assuming 60 percent of the present level of dairying is due to the presence of dairy co-operatives alone, dairy co-operatives help to create 46,674 days of employment for the sample households per year.

7.7 Creation of Self Confidence

Regular employment together with regular and higher income resulting from the operation of dairy co-operatives created self-confidence among the farmers of the district. It is a fact that farmers, especially small and marginal, lack in self-confidence in matters relating to economic aspects as their income greatly depends upon seasonal, climatic and other factors.

It has been found that members of dairy co-operatives are more self-confident than non-members in matters relating to economic affairs. The members seemed to be more self-confident in

taking loans from banks, repaying the loan and rearing more milch animals. This is because of the ready market for milk provided by dairy co-operatives. The pass book given by dairy co-operatives to its members itself is a quarantee card ensuring self-confidence. It is interesting to note that farmers having passbooks issued by dairy co-operatives find it very easy to get goods from provision stores on credit basis. This is because of the fact that merchants are sure that farmers having pass book will be able to pay the price of commodities when they get payment at every week-end. Similarly, banks too are generally confident to pay loan to those farmers who regularly sell milk to dairy co-operatives.

The creation of self-confidence among the members of dairy co-operatives has a number of other effects. Firstly, it has promoted self-reliance, that is, farmers, especially small and marginal farmers are now interested more in dairying than in doing daily labour in other's lands. This is evident from the fact that while 37 percent of family heads in the non-society area are daily labourers (cooli), it is only 19.2 percent among the members of dairy co-operatives. Secondly, it has encouraged farmers to undertake new ventures like housing works, purchase of consumer durables, establishment of biogas plants, making permanent improvement on land and so on. Thirdly, self-confidence and self-reliance has promoted the hard working habit of the farmers and this is explained in detail below.

7.8 Promotion of Hardworking Habit

Industrious and hardworking citizens are the real wealth of a nation. People generally work hard when the work is result-oriented and when there is good prospect in the future. Assurance of ready market and stable income by dairy co-operatives makes the people work hard in dairying.

Efficient, scientific and commercialised dairying requires continuous hard work. As was seen earlier, dairy farmers have to spend an average time of 6.82 hours per day on dairying. Ignoring the extreme cold, farmers have to wake up early in the morning for milking their cows and buffaloes. Members of dairy co-operatives have to bring the milk between 6.30 and 8.00 in the morning. Before milking, farmers have to clean utensils, jars, mugs and cow-shed. After milking, the farmers have to walk about 4 kms to and fro, for selling milk to the society. After selling the milk, they have to go far and near for fodder collections, ignoring sun and rain. Then bovines are to be properly fed and bathed. In short, all the activities related to dairy farming require continuous, patient and strenuous efforts on the part of farmers.

It is interesting to note that farmers of dairy co-operatives are highly busy with their works. They are fully engaged either in agricultural works or in dairying. Farmers sitting

idly in local tea-shops or in nearby small towns wasting time is a rare sight in the society area. Farmers, especially, male members selling milk to the society reach home immediately and get engaged in their other works. On the other hand a large number of farmers who sell milk to the local teashops spend a lot of time sitting in the tea-shops, reading news papers, drinking tea or coffee and sharing local news. But such scenes are a rarity among members of dairy co-operatives who follow commercial dairying. This is because of three reasons. Firstly, farmers who are engaged in commercial dairying with three or four bovines have no time to waste. Secondly, dairying in the district is not at all a female job, nearly one-third of the dairy works are done by male members. Thirdly, all the activities related to three or four bovines, along with household works cannot be done by house-wives alone, and so others are compelled to help. The net result is collective hard-work.

7.9 Influence on Milk-Consumption

Consumption of sufficient quantity of milk is highly essential for the proper physical growth and health of human beings. Therefore, it is important to study how far dairy co-operatives affect the milk-consumption of dairy farmers. So a detailed study of changes in milk-consumption during the last five years, both among the farmers in the society and non-society areas was made.

It has been found that the per capita consumption of milk is far higher among the farmers in the society area than among those in the non-society area. While the Nutritional Advisory Committee of ICMR recommends consumption of 250 grams of milk per day, it is only 118 grams in the non-society area and 197 in the society area. Changes in the per capita consumption of milk both in the society and non-society areas during the span of five years from 1988 to 1993 are given in table 7.6

Table 7.6

Changes in Milk Consumption in the Society and Non-society Areas

Sl.No.	Description	1988	1993	Percentage change
(1)	(2)	(3)	(4)	(5)
1.	Per capita consumption of milk in the society area (grams/day)	170	197	15.9
2.	Per capita consumption of milk in the non-society area(grams/day)	129	118	-8.5
3.	Nutritional deficiency of milk in the society area (grams/day)	80	53	-33.8
4.	Nutritional deficiency of milk in the non-society area (grams/day)	121	132	+ 9.10

Source: Sample Survey

Table 7.6 announces that while the per capita consumption of milk in the society area increased by about 16 percent during the period 1988-1993, it decreased by 8.5 percent during the same period in the non-society area. Similarly, while the per capita deficiency of milk consumption in the non-society area is 132 grams per day, it is only 53 grams per day in the society area.

There are many reasons for lower consumption of milk in the non-society area. Firstly, as the price received by the farmers is very low, they are compelled to sell almost the entire milk they produce to get a minimum level of income. Secondly, as majority of the tea-shops are shops with provision stores attached, farmers who sell milk to the tea-shops purchase essential goods too from the same shops. As the purchase of goods is directly related to the quantity of milk they sell, farmers sell as much milk as possible. Finally, they are generally poor with comparatively lower literacy. Therefore, they have neither sufficient economic power to consume enough quantity of milk nor aware of the need for bridging the nutritional gap by consuming more milk.

On the other hand, the higher price and regular payment enables members of dairy co-operatives to set apart atleast a minimum quantity of milk for domestic consumption before selling to the society. Again scientific and commercialised dairying with morning and evening milking enables members to produce sufficient

quantity of milk for marketing and for domestic consumption. Moreover, it is also found that farmers who sell milk to co-operatives generally stop milk-supply when milk production becomes less than 1 litre (1.5 bottle), whereas farmers who sell milk to tea-shops usually supply milk until milk production becomes one bottle (650ML). This phenomenon also leads to more milk consumption among members of dairy co-operatives. Above all, widesspreád dairy farming among members of dairy co-operatives also leads to high consumption of milk among them.

The under consumption of milk, especially among the non-members is really a pathetic situation. Infact, they are feeding the urban consumers while their own children are in starvation. If milk prices were adequate, no doubt they would have been in a position to set apart a part of their milk to feed their own children.

7.10 Improvement in Standard of Living

Dairy co-operatives have a very important role in improving the standard of living of dairy farmers. Co-operatives offer stable market, comparatively higher prices and make regular payment. The farmers can depend on co-operatives to get regular income by selling milk. The stable and regular income so received enables farmers to keep a regular pattern of higher level of consumption compared to farmers in the non-society area.

As seen earlier, while gross milk income of members of dairy co-operatives is Rs.13253 during lactation period, it is only Rs.6190 in the case of farmers in the non-society area. This shows that gross milk income of farmers in the non-society area is only 46.71 percent of that of the members of dairy co-operatives.

The higher level of dairy income of members of dairy co-operatives resulting from higher production and higher price enables farmers to maintain a higher standard of living. This is evident from higher level of milk consumption, higher possession of consumer durables, better housing facilities, higher literacy index and so on. Details of differences in important indicators of standard of living are given in table 7.7

Table 7.7

Differences in the Indicators of Standard of Living Among Farmers in the Society and Non-society Areas

Sl.No.	Indicator	Society area	Non-society area
(1)	(2)	(3)	(4)
1.	Average non-dairy income (Rs)	12105	7160
2.	Gross milk income (Rs)	13253	6190
3.	Average land holding (Acres)	2.20	1.64
4.	Percentage of family heads engaged in daily labour	19.20	37.00
5.	Average number of rooms	4.32	3.27
6.	Percentage of electrified houses	56.40	24.00
7.	Per capita consumption of milk (grams/day)	197.00	118.00
8.	Average value of consumer durables possessed (Rs)	1845.12	989.72
9.	Literacy index	227.11	181.19

Source: Sample Survey.

Table 7.7 shows that members of dairy co-operatives are superior in all the above indicators. While the gross milk income in the society area is Rs.13253, it is only Rs.6190 in the non-society area. Similarly, while the average value of consumer durables is about Rs.1845 in the society area it is only about Rs.990 in the

non-society area. There are marked differences between the two areas in almost all the remaining indicators as well.

Value of consumer durables possessed by a family is generally a good indicator of its standard of living and it has been found that possession of consumer durables is related more to dairy income than to non-dairy income. Changes in the non-dairy income, dairy income and in the value of consumer durables both among the farmers in the society and non-society areas during the span of five years from 1988 to 1993 are given in table 7.8

Table 7.8

Changes in Non-dairy Income, Dairy Income and Consumer Durables

Sl. No.	Description	Society area			Non-society area		
		1988	1993	Percentage change	1988	1993	Percentage change
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Non-dairy income (Rs)	9027	12105	34.1	6088	7160	17.6
2.	Dairy income (Rs)	5994	13253	121.1	4097	6190	51.1
3.	Value of consumer durables possessed (Rs)	1157	1845	59.5	784	990	26.3

Source: Sample Survey.

Table 7.8 reveals that the increase in dairy income is much higher than that in non-dairy income both among farmers

in the society and non-society areas during the five year period in question. It is interesting to note that while the increase in non-dairy income is 34.1 percent and 17.6 percent respectively for farmers in the society and non-society areas, the corresponding increase in dairy income is 121.1 percent and 51.1 percent. The value of consumer durables has increased by 59.5 percent and 26.3 percent respectively among the farmers in the two areas. This proves that dairy income has a very important role in raising the possession of consumer durables which in-turn influences the level of standard of living.

7.11 Promotion of Co-operative and Democratic way of Living

Dairy co-operatives, in many ways, promote the spirit of co-operation, equality, fraternity, sharing, unity, honesty, tolerance and civic sense.

Members of dairy co-operatives, who sell milk to the society have a feeling of unity and oneness among them. It is interesting to note that farmers who sell milk to the society meet each other, morning and evening, share news with each other and consider themselves members of the same large: community. They are tolerant enough to form queues, respecting priority of those who come earlier. Members share the profit of their joint action proportionately according to their supply of milk.

Dairy co-operatives promote the honesty of its members. Pricing of milk according to the quality encourages farmers to refrain from selling adulterated milk. Selling of quality milk promotes not only the moral standard of the farmers but also the health of consumers. It has been found from the survey that while a large number of farmers in the non-society area sell adulterated milk, especially to local vendors and tea-shops, almost all members of dairy co-operatives sell quality milk.

Majority of the milk supplying members participate in seminars conducted by dairy co-operatives, participate in annual general body meetings and use their franchise. They are, in general, vigilant in the activities of the society. All these, ultimately, promote their civic consciousness.

7.12 Impacts of Dairy Co-operatives -A Discriminant Analysis

The discriminant function analysis is carried out to examine the relative importance of various factors among the farmers in the society area and the non-society area. The discriminant function used is

$$Z = a_1 X_1 + a_2 X_2 + a_3 X_3 + a_4 X_4 + a_5 X_5 + a_6 X_6 + a_7 X_7$$

Where Z is the discriminating score for the farmers in the society and non-society areas.

$a_1, a_2 \ldots\ldots\ldots\ldots a_7$ are the co-efficients of the discriminant function.

X_1 - Literacy index

X_2 - Per capita consumption of milk

X_3 - Average price per litre of milk

X_4 - Value of consumer durables possessed

X_5 - Average yield during lactation period

X_6 - Size of land holding

X_7 - Number of cattle holding

The discriminant function fitted to the data for farmers in the society area and non-society area is as follows.

$$Z = 0.085X_1 + 0.595X_2 + 0.797X_3 + 0.019X_4 + 0.292X_5 + 0.050X_6 + 0.002X_7$$

The over all test of significance of differences among farmers in the society area and the non-society area yielded

$$\chi^2 = 766.553$$

which is highly significant.

Further, the Mahalanobis D^2 found out from the group centroids is

$$D^2 = 6.345$$

D^2 is used to determine whether the differences in mean score profiles between the two groups are statistically significant or not. Large values of D^2 means that the groups are

sufficiently spread in terms of mean separation. In such cases it is likely that new observations can be successfully classified on the basis of the characteristics measured. For testing whether the differences in mean separation are statistically significant, the following statistic F is computed.

$$F = \frac{n_1 n_2}{n n_1 + n_2} \frac{(n_1+n_2-p-1)}{(n_1+n_2-2)p} D^2$$

where p is the number of variables considered, n_1 is the number of farmers in the society area, and n_2 is the number of farmers in the non-society area. D^2 is the Mahalanobis generalised distance.

$$F = 10.028$$

The value of F tested with 7 and 342 degrees of freedom is found to be highly significant indicating that the seven variables considered in the function are of great importance in discriminating the two groups under study.

A step-wise method based on Mahalanobis D^2 is used to find out the significant variables that are required for discriminating the two groups. It is found that average price per litre, per capita consumption of milk, average yield and the literacy index are the prominent characteristics classifying the farmers in the society and non-society areas. The discriminant function obtained by using the step-wise method is:-

$$Z = 0.08247X_1 + 0.61035X_2 + 0.78501X_3 + 0.2992X_5$$

$$D^2 = 40.0858$$

$$F = 709.648$$

The calculated F value is found to be statistically significant at 1 percent level. This implies that these four variables itself can discriminate farmers in the society and non-society areas.

7.13 Benefits from Dairy Co-operatives - A Rating Scale Analysis

A three point scale analysis was done in the study to evaluate the benefits derived by members of dairy co-operatives Farmers were required to reveal their degree of perception of benefits as highly beneficial, beneficial or not beneficial. The perceived benefits were ranked on the basis of total scores. The results of the analysis are given in table 7.9

Table 7.9

Benefits from Dairy Co-operatives

Sl. No.	Perceived benefits	Highly beneficial	Beneficial	Not beneficial	Total	Rank
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Stable income	178	57	15	413	1
2.	Regular payment	147	88	15	382	2
3.	Employment generation	113	91	46	317	3
4.	Help to raise standard of living	89	124	37	302	4
5.	Development of interest in dairying	59	134	57	252	5
6.	Veterinary service	98	53	99	249	6
7.	Any quantity of milk taken	63	99	88	225	7
8.	Feeling of self-confidence	44	122	84	210	8
9.	Provision of balanced cattle-feed	53	92	105	198	9
10.	More social contact	16	161	73	193	10
11.	Bonus	5	158	87	168	11
12.	Payment of price according to quality	5	144	101	154	12
13.	Help to repay loan	21	74	155	116	13
14.	Development of skill and training in dairy farming	19	63	168	101	14
15.	Provision of fodder seeds	11	43	196	65	15
16.	Help to save more	8	47	195	63	16
17.	Loan facilities	4	17	229	25	17

Source: Sample Survey.

Table 7.9 shows that the most important benefit perceived by members of dairy co-operatives is the availability of stable income. This is because of the fact that members of dairy co-operatives are sure that if they produce milk tomorrow, it can be sold to the society at a given price. There will be no risk in the marketing of milk to the members of dairy co-operatives. On the other hand non-members are not sure whether the milk they produce tomorrow will be taken by the local vendors and tea-shops and whether its price be received in proper time. Regular payment and employment generation come second and third in importance.

The table also shows that loan facilities, possibility of saving more and provision of fodder seeds are the minor benefits perceived by members. Because of the failure to repay the loan in stipulated time, dairy co-operatives at present generally do not give direct loan facilities to farmers. As majority of the dairy farmers are poor, the income received from the society is only barely sufficient for their daily bread and so they are not in a position to save. Similarly, the availability of fodder seeds from the society is not valued much by the members because they do not have extra land for fodder cultivation and green fodder is available locally.

To sum up, dairy co-operatives have a very important role in input supply, milk-production, better marketing, employment generation, milk consumption and in improving the standard of living of the dairy farmers.